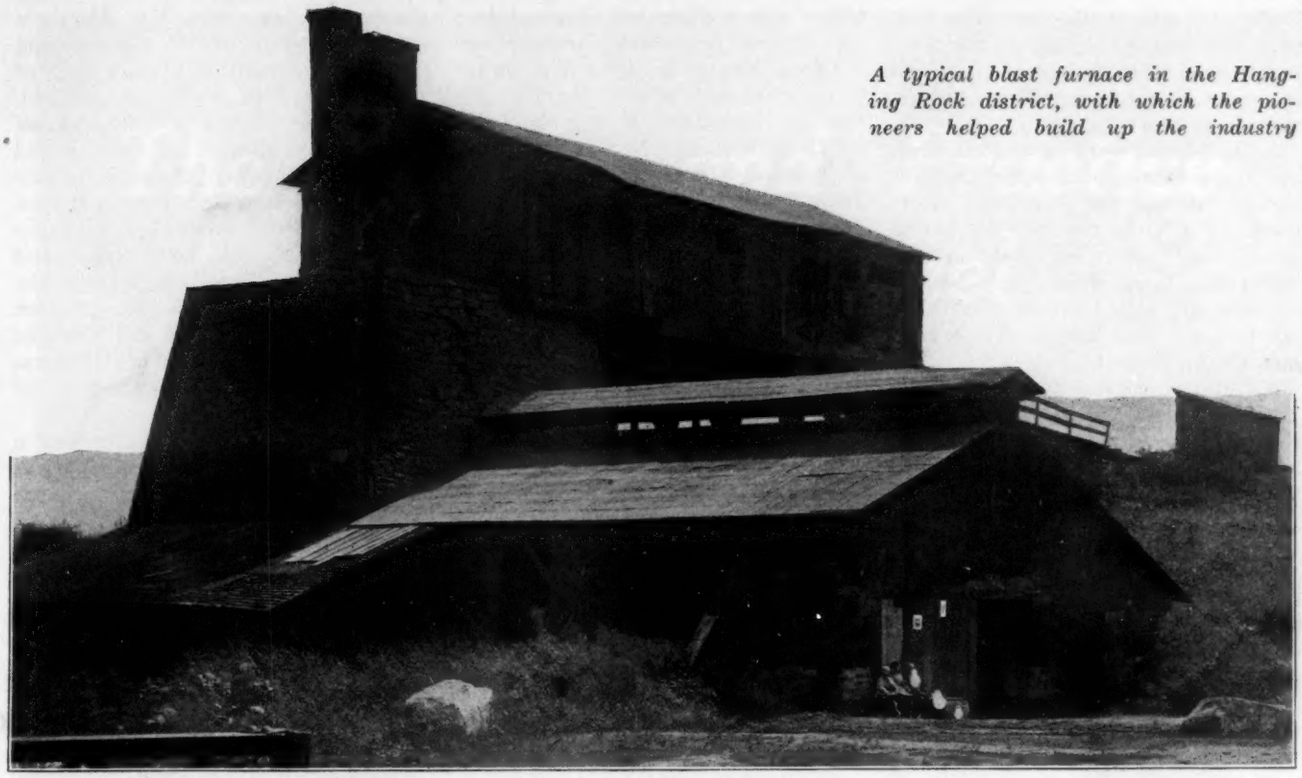


A typical blast furnace in the Hanging Rock district, with which the pioneers helped build up the industry

AULD ACQUAINTANCES

The Ohio Valley Branch of the Pig Iron Family Tree

By W. M. Hearne

THE Ohio river skirts and divides the section of the United States that has produced more pig iron and coal than all the rest of the country.

Historically speaking, there were three iron sections in the Ohio valley. The largest was the Pittsburgh section which included Wheeling and the Mahoning and Shenango valleys. The second section included Ashland, Ky., Ironton and Portsmouth, O., and all of what is known as the Hanging Rock region. The third section included the valleys of the Cumberland, the Tennessee and the Green rivers, all south of the Ohio. No iron has been made on the north side of the river west of Portsmouth, except at Brazil, Ind.

The third section has practically ceased to produce iron, although there are some large furnaces on the Tennessee river where it flows through Alabama. These furnaces ship quite a tonnage of iron on the Ohio river, but they belong more to what is known as the southern group.

On the Cumberland river, when the writer was a boy, there lived a family that made a distinct mark in the early iron business, and their descendants are an important factor in the Connellsville coke district. This was the Hillman family. Originally from Pennsylvania, it is believed, their ancestor went down the Ohio and up the Cumberland and established a charcoal furnace plant, a bloomery and a plate mill in which all the labor was done by negro slaves. The slaves were treated well, and there are many stories regarding their devotion.

Later much of this skilled labor drifted to Louisville, and the backbone of the skilled labor in the Ewald Iron Co., and Louisville Rolling Mill plants were the colored men who were trained in the Hillman mills.

In the early eighties J. H. Hillman and J. J. Grey came up from the Cumberland river district. They were cousins. Grey, the father of Jeff Grey, the founder of the ferrophosphorus business, settled at Cincinnati and became the manager of the Cincinnati office of Naylor & Co.

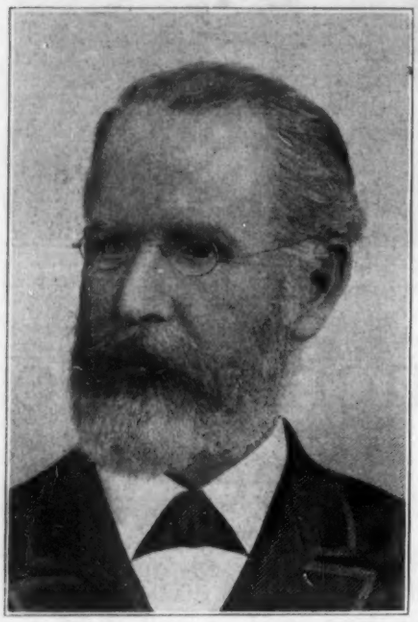
One of his salesmen was Charles Guthrie who afterward rose to be a general partner in New

This is the first of two articles of a historical character on the Ohio valley pig iron industry. The author now is president of William W. Hearne Inc., Philadelphia.

York, of Naylor & Co., and who died while he was president of the Tennessee Coal, Iron & Railroad Co., and chairman of the board of the Republic Iron & Steel Co.

J. H. Hillman went on to Pittsburgh and for a time specialized in the selling of charcoal pig iron. He afterward drifted into the coke trade and invested his money so wisely in coking coal lands that he became wealthy and with his sons established the business now known as the Hillman Coal & Coke Co.

All of the original furnaces on the Tennessee and Cumberland rivers used charcoal for fuel. The iron was loaded upon the steamboats that plied the rivers and was carried to Cin-



MATTHEW ADDY

cinnati where it was consigned to various firms. It was then unloaded upon the river bank, loaded into four-horse or mule-drawn wagons and hauled to storage yards. At the storage yard it was unloaded upon the ground and weighed in half-ton lots on a scale known as a steelyard.

The usual charge for haulage was 60 cents per ton, for weighing 12½ cents per ton, for storage 10 cents per ton per month. When the iron left the yard it was loaded in wagons and weighed again on a wagon scale at a charge of 12½ cents per ton and the haulage to the local foundry or to the railroad was 60 cents to $1.25 per ton, according to distance. So a good deal of expense was added to the cost of the iron in going through Cincinnati in those early days before the railroads were connected up.

Cotton, Peanut and Pig Iron

At one time the merchant iron business of the West centered at Cincinnati. One of the old time firms which sold nothing but charcoal iron was Traber & Aubrey; another was William Means & Co. The latter firm introduced Shelby charcoal pig iron to the trade. It was succeeded by L. E. Warner who was the father of William Warner and the uncle of John Warner, afterward of Rogers, Brown & Warner, of Pittsburgh and Philadelphia.

William Means was elected mayor of Cincinnati. Thomas G. Smith was another pig iron merchant who also served as mayor of Cincinnati.

One of the well-known figures in the pig iron trade was Bacon, unusually known as "old Man Bacon," who was with Traber & Aubrey and afterward sold iron for his own account.

Probably the most noted house in the iron trade in Cincinnati was the firm founded in 1859 by Matthew Addy and his associates, Hull and Rea. At first their business was the forwarding and selling of cotton, peanuts and other southern products and the shipment of pork and other supplies in return. During the Civil war they began to get consignments of pig iron from the various charcoal iron makers located along the Ohio river and its tributaries. These consignments grew while the cotton consignments shrank until finally they turned over the cotton business to two brothers-in-law of Mr. Addy.

Mr. Rea remained in the business only a short time and then it was Addy, Hull & Co. In or about 1869 this firm split up and two firms were organized, Matthew Addy & Co. and L. R. Hull & Co.

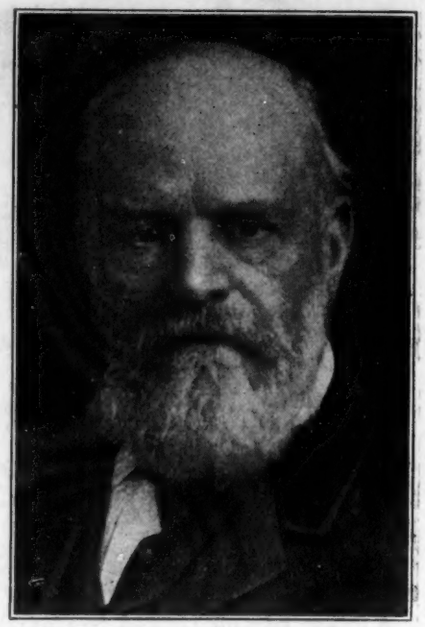
L. R. Hull & Co. was composed of L. R. Hull, E. L Harper and George H. Hull. L. R. Hull died and two firms were organized E. L. Harper & Co. of Cincinnati, and George H. Hull & Co. of Louisville, Ky. George H. Hull retired from the pig iron business and organized and built up the American Pig Iron Warrant Co. E. L. Harper & Co. failed in 1886 when the Fidelity National bank, of which Mr. Harper was president failed.

An Engineer and a Gentleman

William A. Rogers was a clerk and afterward a salesman for E. L. Harper & Co. Mr. Rogers left Harper in 1878 or 1879 and organized the firm of Rogers, Trivett & Co. Mr. Trivett had been correspondence clerk for Matthew Addy. Mr. Trivett died in about a year and Mr. Rogers, looking for a man to handle his correspondence, picked Archer Brown, then editor of the *Cincinnati Gazette*. This was the beginning of Rogers, Brown & Co.

With Brown, on the *Gazette*, was a young man named Meachem. Along about 1885 or 1886 Mr. Meachem left the employ of the *Gazette* and accepted the position of secretary of the Norton Iron Works at Ashland, Ky. There he had a clerk, named Joseph Pollack, who had been raised near the Hunnewell charcoal furnace in Kentucky not far from Ashland. Archer Brown wanted a manager for his firm's St. Louis office and persuaded Mr. Meachem to take the position, and he took Mr. Pollack along. Messrs. Hickman and Williams who organized the firm of Hickman, Williams & Co. were graduates of George H. Hull & Co.

Thomas A. Mack who also was a figure in the pig iron business was a Scotchman and the gossip was that



J. H. HILLMAN

Mack was not all of his proper surname, that he was connected with some prominent Scottish family, but for reasons of his own preferred to be known as Mack. He was an engineer and also a fine business man and when he retired from business and left Cincinnati he left many friends and a good reputation. He came to Cincinnati from Oxmoor, Ala., where he had operated the Eureka furnace, now owned by the Tennessee Coal, Iron & Railroad Co. The first car of pig iron that ever arrived in Cincinnati, all railroad from the Birmingham district, was a carload of Eureka iron consigned to Matthew Addy & Co. This car passed over the Cincinnati Southern railroad bridge when it was opened.

In Thomas A. Mack's office were Charles Eaton and Frank Eaton. The latter became sales manager for the Virginia Coal, Iron & Railroad Co.

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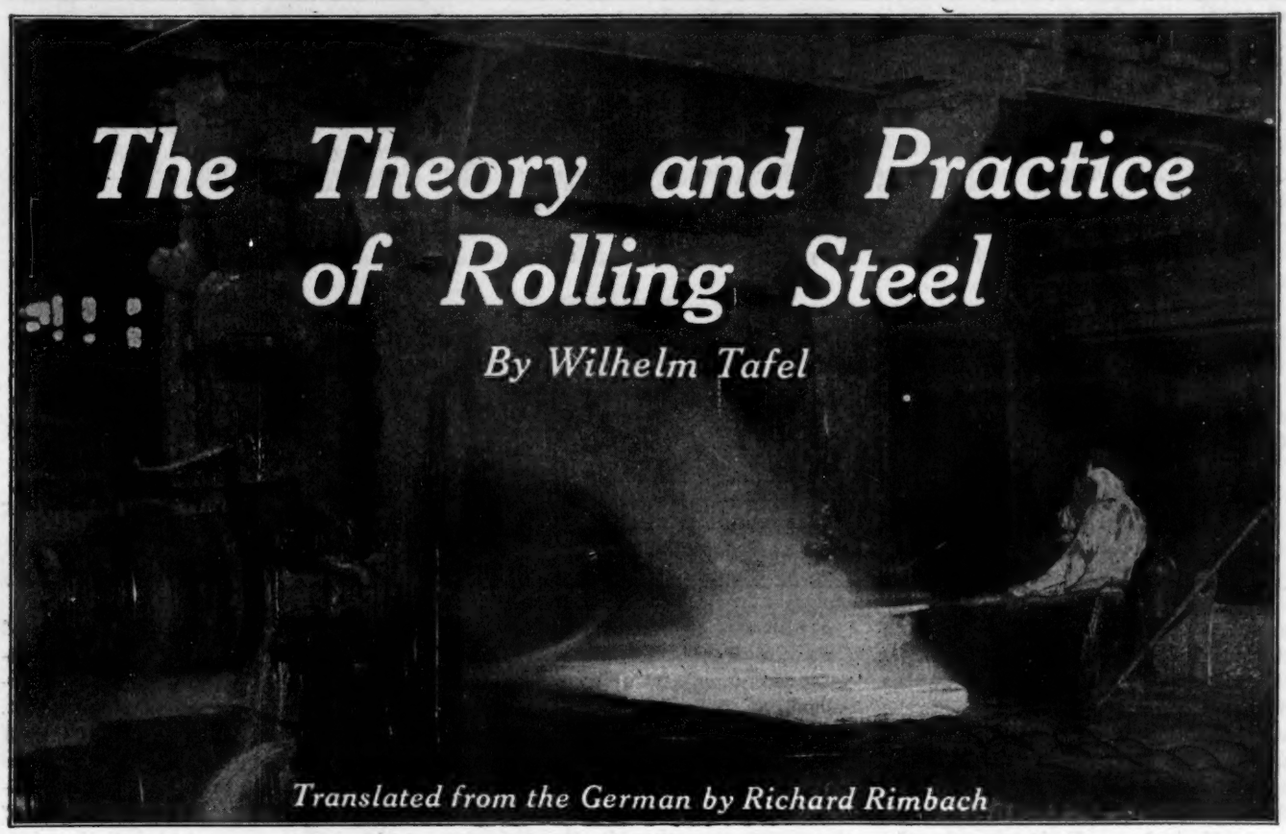

The Theory and Practice of Rolling Steel

By Wilhelm Tafel

Translated from the German by Richard Rimbach

Chapter V—Continued

INVESTIGATING irregular pass designs mathematically by the method instituted by the author will be as useful to the experienced, as to the novice in roll design.

The graphical determination of L_m can be substituted for the mathematical. For this purpose the elongation diagram which previously was used in the design of elongating passes, is drawn with $1, \frac{H_1}{h_1}, \frac{H_2}{h_2}, \ldots\ldots \frac{H_9}{h_9}$ etc. as in Fig. 126 and with the width equal to the pass width as in Fig. 127 the surface 7, 1, 2, 3, 4, 5, 6. If the area found with the planimeter is divided by B, the value of L_m is obtained. A simple procedure to find the average height is to open a compass to the size of the first ordinate, set it at the beginning of the second and open it to include the second. The sum of two ordinates thus is obtained. This is continued until the compass cannot be opened any further; the size of the opening and the number of measured ordinates are recorded. This procedure is repeated until all ordinates have been taken up by the compass. The sum of the compass openings divided by the number of the ordinates is the desired average height. L_m is the height of the rectangle 6, 7, 8, 9 which has the same area as the elongation diagram. The two-lined curved surfaces 2, 3, 10 and 1, 2, 8 therefore must be equal. They form a measure of the material flowing off inside the pass plane from the more centrally pressed cross-section part into the less-pressed edge parts and therewith a measure of the retained residual stresses in the profile after the accomplished flowing process. The elongation diagram thus forms a further means to the roll designer to judge the flow procedures in rolling uniformly-pressed cross-section parts.

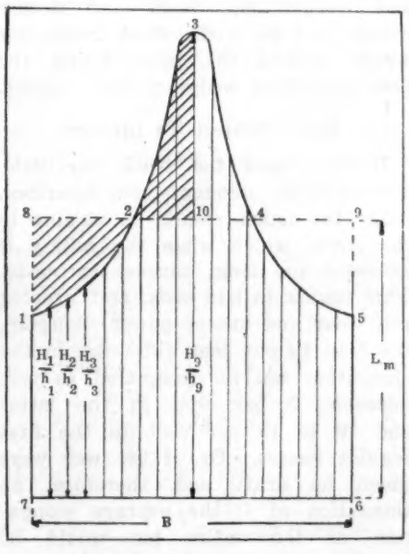

FIG. 127—DIAGRAM USED IN THE DESIGN OF ELONGATING PASSES

The tee shows clearly the division of the whole profile into single rectangles and the calculation, according to the reduction relation. As an example a tee 1.969 × 1.969 × 0.276 inches is chosen. Its hot profile is 1.988 × 1.988 × 0.276 inches. The designs are made from the last or hot profile backward to the first pass. In Table IX are determined the chosen thicknesses d, and heights, h, that is, the web and the right and left halves of the head. These then are transposed to the pass drawing, shown in Fig. 128.

From h and d the cross-section is calculated. If the surface of a part of the pass so determined is divided into that of the previous pass, the natural elongation, n is obtained. Sizes h and d are found as follows: First, the draft and thickness in the lowest horizontal profile part are decided. In pass 6 the head is horizontal. A draft of 0.049-inch is chosen for pass No. 5 from a reduction stepping for flats or hoop iron. A thickness of 0.325-inch in this pass therefore, is obtained.

Where the elongation is the same in all parts of the profile, the spread in each as with flats is 0.25 to 0.35 times the draft, according to Geuze. If the elongation is retarded in some

Table IX

Table for the Design of a 1.969" x 1.969" x .276" Tee

PASS NO.	HEAD RIGHT h	d Point	d Base	Q Square inches	n Elongation	HEAD LEFT h	d Point	d Base	Q Square inches	n Elongation	WEB h	d Point	d Base	Q Square inches	n Elongation	FILLET RADIUS Head	Web	Between Head and web
VI	0.994	0.276	0.276	0.274	—	0.994	0.276	0.276	0.274	—	1.713	0.306	0.345	0.472	—	—	—	0.020
												0.276*						
V	0.974	0.345	0.374	0.317	1.15	0.974	0.325	0.325	0.317	1.15	1.850	0.276	0.276	0.510	1.08	—	—	0.059
		0.325*																
IV	0.906	0.325	0.325	0.358	1.13	1.102	0.325	0.325	0.358	1.13	1.811	0.384	0.417	0.606	1.19	—	—	0.079
												0.335*						
III	1.043	0.394**	0.394**	0.411	1.15	1.043	0.413	0.452	0.411	1.15	2.028	0.335	0.335	0.679	1.12	0.138	—	0.118
							0.394*											
II	1.122	0.394*	0.512	0.508	1.24	1.181	0.374**	0.413**	0.465	1.13	1.949	0.433	0.433	0.844	1.24	0.197	0.197	0.197
		0.452					0.394											
I	1.428	0.394	0.571	0.693	1.36	1.428	0.394	0.571	0.693	1.49	1.161	0.669	1.575	1.304	1.54	—	—	0.197
		0.482					0.482					1.122						

* The thickness, *d*, is not determined from the pass, because it does not fill in width, but from the previous pass.
** *d* should be made 0.010" narrower in the design because of the side spring.

parts, the spread will be larger in the adjacent parts as was previously shown. The spread according to the plasticity or the temperature of the stock is taken as 1½ to 3 times the spread of flats. This gives about 0.039-inch spread in the head and the height of the head in pass 5, as 1.949 inches. Unfortunately the increase of the spread cannot be calculated due to the influence of the less elongated adjacent parts. The material held back flows partly into the more strongly pressed neighboring section and partly into the width. The flow to each side is unknown. The more steel that goes into the width, the harder it is for the material to give way into the neighboring part, particularly if the latter only borders on one side instead of on two and if the angle of the direction of flow is steep. Both conditions apply in the case with tees. The abnormal spread is noticeable from the first into the second pass.

Only indirect draft can be exerted on the thickness of the vertical parts. Where the vertical part lies above, up to 40 per cent, according to the temperature, of the indirect draft can be used at the point where the pass parting lies. The draft determines the thickness since $d \times h = Q$ and also the height h, as soon as the value for Q is known. In pass 5 indirect draft is avoided.

If the draft and the spread are determined as mentioned the cross-section and the natural elongation are available. If the latter is to be the same size for another profile portion, this cross-section Q_1 also is given. Therefore, it is only necessary to multiply that of the previous pass, Q_1, by this elongation, or, 0.472-inch × 1.15 inches. The former value is the web section after pass No. 6 as shown in Table IX; the latter value was calculated from the draft and spread of the right and left halves of the head. This would give a web section in pass No. 5 of 0.546-square inch. Since the web thickness in pass No. 6 is 0.276-inch and since the slight upsetting in the finishing pass as with flats is neglected, the height of the web would be 0.546 ÷ 0.276 or 1.969 inches.

In the table an elongation of 1.08 is given instead of 1.15, which corresponds to a web height of 1.850 inches instead of 1.969 inches. The vertical part is permitted to remain 7 per cent behind the horizontal. The purpose for this is, to keep the spread of the web low and to work in opposition to it by shrinkage, which is the case with every unequal elongation. If this practice is not followed there is the danger that the web is upset and wedged in. With such deeply cut-in pass parts the stock frequently wraps around the rolls, filling the pass and often wedging itself tightly.

Stock Subject To Strains

Holding back the stock too little, increases the dangers just described, while too much results in strains in the stock, which when the rolling is executed too long, causes tearing-in. This results in bad ends, and, greater roll wear and use of power. Roughly, the 5 to 15 per cent difference in the elongation can be designated as permissable, 5 per cent in the latter and 10 to 15 per cent in the first regular passes. Or, if the web were given no draft and, therefore, an elongation of 1, the average elongation of the entire tee would be (1+1.15)÷2 or 1.075 because the web retards the approximately equal sized head the same amount, as the head pulls along the web. If the shrinkage, due to being pulled along, proceeds at the expense of the height, an allowance of 1.713 × 1.075 = 1.841 inches must be made so that the shrinkage is accompanied by the rolling draft. In Table IX a height of 1.850 inches was chosen. Moreover the whole shrinkage does not take place at the expense of the height, but partly at the expense of the thickness of the web. While a slight upsetting of the web thickness occurs this does not occasion any exceptional spread, nor does it cause wedging-in, but irons out a part of the resulting rolling stresses. This calculation only is approximately correct. Actually the flowing from the web toward the more strongly elongated head does not occur uniformly over the whole cross-section. The more the flowing the nearer the particular part of the web is from the head and vice versa. Near the head often is found a shrinkage of the web thickness or at the opposite end a spreading or upsetting. The calculation gives average values only. The design, however, is more accurate if the values are considered.

The last and next to last passes are permitted to spread freely to prevent the formations of a fin standing perpendicular to the web or the head. Therefore, open passes are used for the web. In pass No. 5 such a fin would increase the wedging-in danger in the following pass. Beginning in pass 4 the horizontal part is permitted to run against the side in order to receive sharp corners. Here the pass is closed.

Indirect draft from pass No. 4 into pass No. 5 is not given. It could be used above but not below.

If it was on one side, an unsymmetrical fourth pass would result. This is not impossible to do, but undesirable. It complicates the entrance guides and the exit guards and influences the stock to leave the rolls crooked. Avoidance of side draft is preferable to receive a head thickness of 0.325-inch in pass No. 4.

The spread of the web is taken as 0.039-inch and its height as 1.811 inches. The web thickness, which is 0.335-inch, is not determined in the edging pass, but in the previous third pass. The edging pass must be wider considering the danger of wedging in. Widths of 0.384-inch are chosen for below and 0.417-inch for above equal to a taper of 1 per cent. According to the foregoing an elongation of the web equal to 1.19 results from the fourth into the fifth pass; in the head it is chosen as 1.13. A cross-section, therefore, is received of each side of the head of 0.317 × 1.13 or 0.358-square inch and a height of 0.358 ÷ 0.325 or 1.102 inches. In the same manner the dimensions of passes Nos. 3, 2 and 1, respectively, are determined.

In passes Nos. 2 ad 3, which differ from No. 5, indirect draft is used on the part of the head lying in the upper roll. By this arrangement smaller direct draft can be chosen and less deeply cut-in passes received.

As the stock is turned 180 degrees from the second into the third pass, indirect draft is received on the left side, and in the next pass on the right side of the head; the unevenness therefore is evened up. Heavy indirect draft causes a sidewise spring of the rolls. If for example at the point in the upper part of pass No. 2 a thickness of the head of 0.374-inch and at the base 0.413-inch exists, which is shown in Table IX, the pass must be made lighter, in order to counteract in advance the unavoidable sideward giving-way of the rolls.

Factors Influence The Size

The size depends on the one-sided indirect draft and the roll diameter. With double sides, as with beams and channels, this springing does not occur, because the side drafts counteract each other. With side drafts less than 0.039-inch the sideward spring is so small, that it may be disregarded. Small rolls give way more than large units on account of the small bearing surfaces. Ordinarily 0.10 to 0.20-inch is provided for the sideward spring. In the second and third passes 0.010-inch is taken.

In the head of pass No. 3 a fillet of 0.138-inch radius is used. It is chosen large because the entered stock is 0.039-inch narrower than the pass and, therefore, the fillet can give way this amount. Moreover, part of the fillet is rolled out in the fourth pass. It is made 0.059-inch in the fifth pass which suffices to prevent the formation of fins. In the web, no fillet is necessary in pass No. 3, because it is permitted to run free in pass No. 5. The head in the second pass and the web is given large fillets of 0.197-inch radius because they should preserve themselves through two passes; both do not work out fully in so far as the pass does not entirely fill in width. Fillets, which are too large, are corrected easily but those too small ones are difficult to change.

The narrower the edging passes are made, the greater the danger of wedging-in. If to prevent this it is made wide, offsets are formed in the corners in the change from the web to the head a a^1 as shown in Fig. 129. The reason for the offsets is that a pass made too wide does not reach into the angles of the profile with its corners and, therefore, cannot squeeze away material from the head at the desired points. This moreover retains over the width b_x the original thickness h_1, while to both sides it is pressed down to h_2. These offsets, which are difficult to prevent with a sharp cornered tee, represent a defective appearance in the finishing pass; with roughing passes, as with pass No. 4, they later can be squeezed away, the corresponding places on the roll being stressed considerably and easily spall off. An intermediate value for the width, therefore, is chosen for which the design under consideration may offer a starting point.

An efficient arrangement of finishing and roughing passes is to put the roughing passes on a 3-high or a double 2-high mill and the finishing passes on a 2-high mill. To prevent roll impact it is advisable to permit the upper finishing roll to run by friction. Its diameter can be made 1.969 to 3.937-inch smaller

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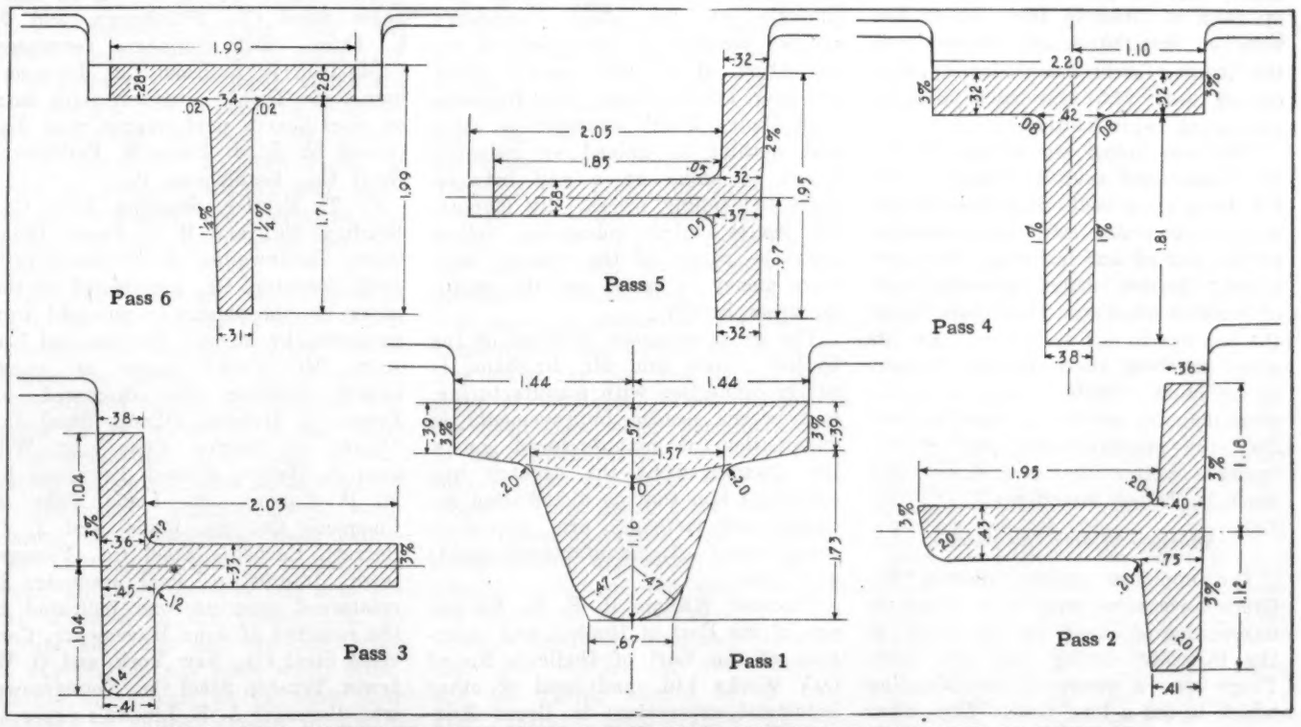


FIG.128—PASS LAYOUT OF A TEE USING THE VARIOUS DIMENSIONS TABULATED IN TABLE IX

STEEL PRODUCERS MUST BE BETTER MERCHANTS

Forceful Declaration for Better Methods, Made by E. G. Grace, Brings Long Applause at Institute Banquet—Contrasts Volume with Earnings

HAVE we attended to the commercial end of our business as well as we have the manufacturing end?" was the question asked by Eugene G. Grace, president of the Bethlehem Steel Co., at the American Iron and Steel institute banquet last Friday night.

The steel industry, said Mr. Grace, employs between four and five billion dollars of the country's invested capital. It is responsible for this great wealth and is charged with the obligation of earning a profit for those who have invested the money. And yet, he continued, he had read in a business paper that this great industry, which produces approximately three-quarters of all the steel made in the world, is earning only between 4 and 5 per cent. What Mr. Grace evidently had in mind was an analysis by John W. Hill, in IRON TRADE REVIEW of May 20, which showed that the leading steel companies in 1925 earned only $4.51 for each $100 of aggregate capitalization.

"We are doing big things in the steel industry," said Mr. Grace. "We are doing them well. But these things are in connection with the manufacturing end of our business. We constantly develop more improved ways of making steel and then pass along the benefits to our customers. At this great meeting there is one thought in my mind. I believe that we in the steel industry are called upon to conduct the merchandising side of our business better than we have. We must be better merchants."

Address Widely Applauded

The applause which followed Mr. Grace's remarks was of a character unprecedented since the meetings of the institute during the war days. There was a storm of handclapping which lasted a long time. Then after it had quieted down the applause started all over again. Clearly, Mr. Grace had struck a responsive chord. Incidentally this was Mr. Grace's maiden appearance as an after-dinner speaker at the institute meetings. He stepped into the gap formerly occupied by Charles M. Schwab, chairman of the Bethlehem Steel Corp., whose speeches on past occasions were the high lights of many of the institute's banquets.

Arthur Brisbane, editor of the New York *Evening Journal*, again was a speaker at the banquet. Speaking about interviews with Judge Gary, Mr. Brisbane said he frequently had asked the judge whether stocks were going up or down. To this question the judge would reply they had to go either way because they could not go sidewise. Mr. Brisbane said that after hearing Mr. Grace's talk about the struggle of the steel companies against poverty, he advocated the organization of a steel men's relief and soup kitchen fund. Mr. Brisbane cited Henry Ford's example to show that nothing is gained by reducing wages to make up a gap between costs and selling prices. By increasing wages, other industries follow suit; the people of the country have more money to spend and the manufacturers benefit.

The great economic problem of the United States, said Mr. Brisbane, is not in connection with manufacturing. It concerns needed improvements in distribution of manufactured goods. His travels about the country had convinced him that as distribution facilities and methods are improved, consumption of manufactured goods will grow.

Viscount William H. E. W. Ednam, son of the Earl of Dudley, and chairman of the Earl of Dudley's Round Oak Works Ltd., and head of other industrial enterprises in Great Britain, described some aspects of the industrial situation in Great Britain. Where the problem of the United States is in connection with employment, said Lord Ednam, that in England is unemployment. Every time a manufacturer there utilizes American labor saving methods, just so many more people are added to the army of the unemployed. Lord Ednam told about the difficulties and adversity with which the British iron and steel industry is confronted, but he expressed the belief that in the course of years Britain again would regain her old position as an iron and steel producer.

Attendance at the banquet numbered 1350. This was the largest number in many years. At the noon luncheon of the directors of the institute, S. E. Hacket, vice president, Jones & Laughlin Steel Corp., was elected a director.

Speech Is Brief

Judge E. H. Gary, in calling the general meeting to order Friday morning made the shortest address which the institute has heard from him in many years. Following a few words of welcome to the large gathering, he addressed himself at once to the reading of his prepared speech. His remarks were devoted to labor problems and to general business conditions. Following the chairman's address, the remainder of the morning session and the afternoon session were devoted entirely to presentation and discussion of various technical papers.

The paper on modern steam power stations by Messrs. Clark and Galusha was discussed by S. S. Wales, Carnegie Steel Co., Pittsburgh, and J. E. Fries, chief engineer, Tennessee Coal, Iron & Railroad Co., Birmingham. Mr. Diehl's comprehensive data on open-hearth performance was discussed by B. J. Pazzetti, Bethlehem Steel Co., Bethlehem, Pa.

C. T. Ressler, Reading Iron Co., Reading, Pa., and H. J. Force, Delaware, Lackawanna & Western railroad, Scranton, Pa., commented on the paper on phosphorus in wrought iron presented by Messrs. Rawdon and Epstein. Mr. Cort's paper on open-hearth furnaces was discussed by James L. Hyland, Illinois Steel Co. "Notes on Testing Coke," by William A. Haven, elicited discussion by M. D. Curran, St. Louis Coke & Chemical Co., St. Louis, and J. C. Barrett, Carnegie Steel Co., Youngstown. Interest of steel producers in reinforced concrete was indicated in the remarks of John Havemeyer, Concrete Steel Co., New York, and O. W. Irwin, Truscon Steel Co., Youngstown, who discussed A. E. Lindau's paper on "Reinforced Concrete."

Labor Relations Harmonious

American Workmen Generally Well Treated and Contented—Employers Stand for Open Shop—Britain a Shining Example of Law Enforcement —Business Conditions Better Than Average

By E. H. Gary

IT IS believed to be appropriate just at this time to indulge in a few remarks concerning the recent labor strike in England. We rejoice that the opposing interests seem to have emerged from what appeared to be conditions approaching serious controversy without leaving any unhealed or incurable wounds or bitterness. We congratulate all who participated in bringing this about. The whole world is akin, and whatever severely hurts one part to a greater or lesser extent is felt in the other parts. This is especially true of Great Britain and the United States, for many and obvious reasons.

A few pertinent suggestions may be emphasized. No important dispute between different interests, national or international, can be finally settled unless the conclusion is both righteous and logical. Perhaps if it is either, it is necessary both.

According to the public prints, it has recently been stated by a leading, and, as I believe, an intelligent labor leader and very good citizen, that many of the employers of this country will not permit collective bargaining in behalf of employes. This statement is not strictly accurate, unless it was intended to say only that certain employers refuse to participate in negotiations for labor conditions and terms with men claiming to speak for groups of workmen they do not really represent. In such cases, in order to properly discuss and intelligently consider the questions involved, all the facts must be disclosed.

Generally there are two reasons, at least, for the attitude assumed. First, confining our attention to the United States, the groups of men, through their alleged agents, are not, nor will agree to be, subjected to any kind of governmental supervision, investigation or control, such as is required of employers. Their form of association, their decisions, their collection and distribution of monies, in short, all their methods and acts are not disclosed to the public, and, as a rule, the rank and file have little to say and do not have much information in advance as to what their leaders, so called, expect to do in regard to their welfare, or what money is to be raised or expended or when or how it will be used. Nor is any account rendered to those who contribute. Usually they have no voice in the question of whether they shall be required to strike or allowed to work.

Again, if there is a strike, in many if not most cases, as appears in published accounts, and the strike is prolonged, or if men not desiring to participate in the strike attempt to work where plants are idle, either because they need the wages for support of family or otherwise, then intimidation and brute force are resorted to, resulting in destruction of property and the injury of person. The men are forcibly kept from working.

Men have the right to act collectively. No employer can or should attempt to prevent this so long as all laws are complied with, otherwise than by withholding employment or by discontinuance of operations. This the employers have the right to do, so long as they observe all the provisions of the laws.

Open Shop Sentiment Prevails

It is not now intended to discuss in detail, or in the main, labor questions, or the results of labor management. For the last few years the reading public in our country at least has been kept fully informed concerning the conditions existing. There is no desire or intention to provoke discussion, much less controversy, nor to do more than hint at the position and disposition of employers in this country.

It may and should be said that the employers in the United States generally stand for fair and liberal treatment of employes. They believe in the open shop which permits a man to work whenever and wherever he is disposed and can agree with the employer. They insist labor should always receive proper and adequate compensation, depending upon the financial ability of the employer and the results of the business; that the employe should be humanely treated; that the welfare of the employe and his family should be of high and constant consideration by the employer; that his person, his health, his comfort, should be protected and safeguarded; that he should be considered an associate and not an inferior; that so far as practicable he should be given an opportunity to purchase an interest in the business he is connected with, having the same rights, advantages and responsibilities and standing on the same basis as all other stockholders; also that he should be subjected to the same restrictions concerning behavior, attitude and accountability to the laws that relate to the employer. We do not believe that he should be entitled to a voice in the management of the employer's property or business unless he has a pecuniary interest and corresponding responsibility. It would not be logical or right if one should claim and receive, without voluntary consent of the owner, the right to manage the property or business of the latter, without liability or obligation for results—whether it be in the factory, the shop, the office or the dwelling.

It may truthfully be said that labor generally in the United States is well cared for and is contented. In some lines or places it is overpaid; in some instances perhaps underpaid, though it is hoped and believed such cases, if any exist, are exceptional and will be rectified. It is useful to learn facts relating to present conditions in any line of industry.

Speaking of the iron and steel industry and confining the subject to the United States Steel Corp., which is more or less indicative of the general steel industry in this country, in the following figures will be found evidence bearing upon business conditions:

STEEL CORPORATION BUSINESS COMPARED

	Tons per day
New bookings, current month	30,000
New bookings, same period last month	29,600
New bookings, same period last year	18,900
New bookings, Jan. 1, 1926, to date	38,700
New bookings, Jan. 1, 1925, to corresponding date last year	41,100
New bookings during the lowest consecutive five months in the history of the corporation	7,650
Shipments, current month	45,200
Shipments, same period last month	47,900
Shipments, same period last year	43,100
Shipments, Jan. 1, 1926, to date	49,500
Shipments, Jan. 1, 1925, to corresponding date last year	47,000
Shipments during the lowest consecutive five months in the history of the corporation	18,100

Institute Speakers Present Results of Research

WILLIAM A. HAVEN

WILLIAM A. HAVEN, superintendent northern blast furnaces, Republic Iron & Steel Co., Youngstown, O., presented a paper entitled, "Notes on Testing Coke" at this meeting of the American Iron and Steel institute. Mr. Haven was born in Swissvale, Pa., Aug. 1, 1888. Following education in the schools of that city, he attended Pennsylvania State college at State College, Pa., being graduated from that institution in 1908 with the degree of bachelor of science in industrial chemistry. His first connection with the iron and steel industry was in June, 1909, as a laborer in the blast furnace department at the Farrell works of the Carnegie Steel Co. He next spent five years with the United States Steel Corp. as blast furnace foreman at the Farrell and Clairton works of the Carnegie company. Later he became superintendent of blast furnaces at the New York Steel Co., Marting Iron & Steel Co., Ironton, O., and Pittsburgh Crucible Steel Co., Pittsburgh. In 1917 he became superintendent of the Haselton furnaces for the Republic Iron & Steel Co., and in 1918 was appointed to his present position as superintendent of northern furnaces for that company.

DURING the last 20 years D. L. Galusha has been active in the investigation, design and construction of projects involving generation, transmission, distribution and industrial application of electrical power. After graduation from the Massachusetts Institute of Technology in 1904, he took the apprenticeship course at the East Pittsburgh works of the Westinghouse Electric & Mfg. Co. His earlier experience includes design, manufacturing and testing of equipment; erection of machinery, switchboards and transmission lines; preparation of specifications and purchase of material; and operation of steam and hydraulic generating plants and transmission systems. His later work includes administrative control. Mr. Galusha joined Dwight P. Robinson & Co., Inc., New York, in 1919.

W. E. CLARKE'S experience as power engineer in the central station field during the past 25 years, covers more than 50 plants, with an installed capacity in excess of 1,000,000 kilowatts. From 1901-02 he was employed by Armour & Co. in the installation of central lighting, power and refrigerating plants. While connected with Sargent & Lundy, Chicago, consulting engineers, from 1902-07, Mr. Clarke handled a large amount of power station work. Between 1907 and 1910 he was connected with the New York Central & Hudson River Railroad Co. in the construction and supervision of their Yonkers power station. In 1910 Mr. Clarke became mechanical engineer for Stone & Webster, supervising in all parts of the country. Mr. Clarke has been connected with Dwight P. Robinson & Co., Inc., since 1919.

AMBROSE N. DIEHL

AMBROSE NEVIN DIEHL, vice president in charge of operations, Carnegie Steel Co., Pittsburgh, has been a frequent contributor to the programs of the American Iron and Steel institute, and as well to those of the American Institute of Mining and Metallurgical Engineers and Engineers Society of Western Pennsylvania. He is a director of the last two organizations. He is a member also of the American Society of Mechanical Engineers. Mr. Diehl was born in York county, Pennsylvania, Oct. 20, 1876. He graduated from Pennsylvania State college in 1898. After one year in experimental agriculture he took a position with the laboratories of the Carnegie Steel Co. at its Duquesne works. After seven months he was transferred to the blast furnace department and six months later was made assistant superintendent. From 1902 to 1915 he was in charge, becoming then assistant general superintendent of the Duquesne steel works and blast furnaces. He next served as assistant operating vice president in Pittsburgh during the war period. In 1918 he became general superintendent of the Duquesne works. He was made vice president in charge of operations in January, 1925, to succeed the late William Whigham. Mr. Diehl is in charge of operations of the mills in the Monongahela district and gives special attention to river transportation and its development.

Papers Cover Wide Range of Technical Subjects

STEWART J. CORT

STEWART J. CORT, Bethlehem Steel Co., Bethlehem, Pa., was graduated from Lehigh university, Bethlehem, in 1906 with the degree of metallurgical engineer. He immediately became connected with the iron and steel industry, joining the Duquesne works of the Carnegie Steel Co. He was with that company from 1906-16, occupying the position of assistant superintendent of the open-hearth department from 1909-16. In the latter year he went to the Cambria works of the Midvale Steel & Ordance Co. as open-hearth superintendent, but in the course of a few months was transferred to the Wilmington plant as general superintendent. In 1917 he took charge of the open-hearth department at the Saucon plant of the Bethlehem Steel Co. and in 1922 was appointed superintendent of the plant. His paper, presented before this meeting of the American Iron and Steel institute, was entitled, "Comparison Between Open-Hearth Furnaces of Various Sizes." Mr. Cort is a member of the American Iron and Steel institute.

HENRY RAWDON, chief of metallographic section, bureau of standards, Washington, was born at Mickleover, Eng., June 7, 1880. He was graduated from the University of Michigan as a bachelor in chemical engineering in March, 1912. He entered the service of the bureau of standards as assistant physicist qualified in metallography, Nov. 7, 1912. As chief of the metallographic section Mr. Rawdon has supervision of testing, investigation, and researches concerned with microscopy and structure of metals and alloy including study of ultimate atomic structure of metals by X-ray analysis, identification of metallogoraphic constituents of metals and the previous heat treatment and mechanical working received; examination for evidence bearing on the causes of service failure of metal products, etc.

SAMUEL EPSTEIN, assistant chief of the metallographic section, bureau of standards, Washington, was born in Brooklyn, N. Y., Nov. 27, 1896. He was graduated from the City College of New York with the degree of bachelor of science in 1918. He entered service of the bureau of standards as a laboratory assistant in January, 1919. He engaged in metallographic research at the bureau of standards. He is a joint author of scientific paper No. 452 on "Structure of Martensic Carbon Steels and Changes in Microstructure Which Occur Upon Tempering," and a joint author on technologic paper No. 156, on "Metallographic Features Revealed by Deep Etching of Steel." He has contributed also to magazines on metallographic subjects and is well known in industry for his work in metallography.

A. E. LINDAU

A. E. LINDAU, president of the American System of Reinforcing and the American Wire Fence Co., Chicago, was graduated from the University of Michigan in 1900. His first post was with the Whiting Foundry Equipment Co., now the Whiting Corp., Harvey, Ill., followed by experience in bridge detail and design with the Wisconsin Bridge Co., Milwaukee. In 1906 he became chief engineer for the Corrugated Bar Co. A period as western manager for the company was followed by his elevation to general manager. In 1918 he was made a director and three years later vice president. Early in 1924 in company with J. T. Hanley, who had been western manager for the Corrugated company, he acquired the American System of Reinforcing. In that year also he was made president and director of the American Wire Fence Co. Mr. Lindau has been one of the most active men identified with the concrete reinforcing industry. In 1924-25 he was president of the American Concrete institute. He has been a director of the Concrete Reinforcing Steel institute since its formation, and is a member of the joint committee on reinforced concrete. Mr. Lindau's paper, presented at this meeting of the American Iron and Steel institute was entitled "Reinforced Concrete."

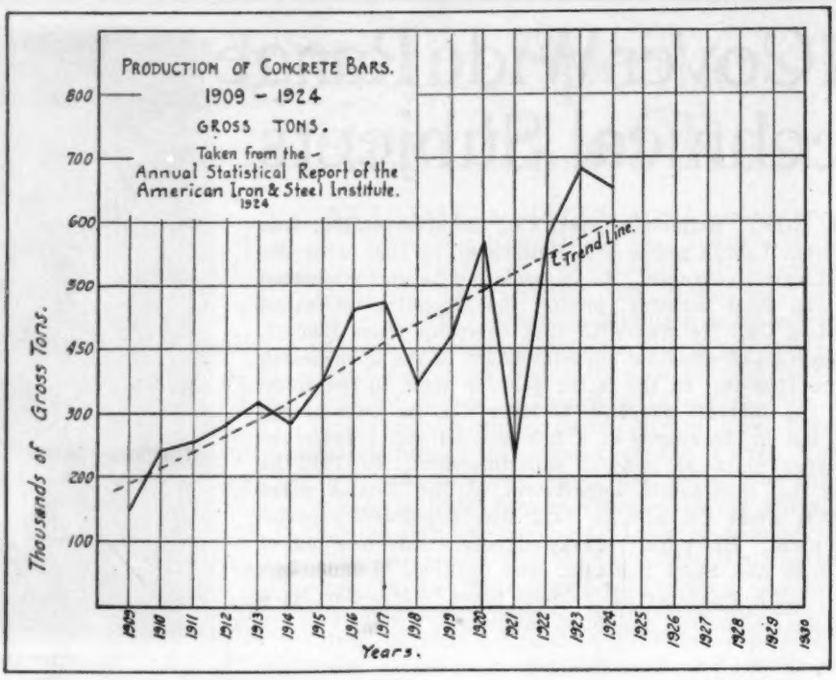


Fig. 1—Production of concrete reinforcing bars in the United States. It is estimated that the total shipments from 1909 to 1924 amounted to 7,200,000 tons with a value of $360,000,000

Portland cement production has increased from 8½ million barrels in 1900 to 137 million barrels in 1923. Money spent for cement alone in 25 years aggregates about $2,125,000,000

Reinforcing Consumes Much Steel

By A. E. Lindau

TONNAGE of steel used for reinforcement can only be approximately estimated, especially in the early years. Prior to 1905, plain bars were used almost excusively. Althought the twisted bar was patented by E. L. Ransome in 1884 and used by him and many other engineers, still the average practice inclined to the use of plain bars. These were frequently purchased from the general stock of merchant bars of some conveniently located warehouse. Even when ordered from the mill, no record could be kept of the use to which they were put. For this reason we are much in the dark as to quantity of steel bar reinforement consumed, until the more general adoption of specially formed bars now referred to as deformed bars.

From the sales records of the firms specializing in reinforcing products, data has been secured to supply approximate tonnage records from 1900 to 1909, which amounts to 680,000 tons approximately, since which time the records of the American Iron and Steel institute are available. In Fig. 1 we have a graphic record of reinforcing bar tonnage. If we multipyly each year's tonnage by the mill price for that year and add about $2.00 per ton for size extra, we shall have the annual value on a Pittsburgh base and, totaling the annual figures, we find that a total value of $360,000,000 f. o. b. cars, Pittsburgh, has been shipped as reinforcing bar steel, involving a total tonnage of 7,200,000 tons.

The peak production of air-cooled blast furnace slag for all purposes totals 8,000,000 tons per year, of which 40 per cent is consumed by concrete and reinforced concrete structures. At an average price of $1.50 per ton this amounted to $4,800,000 per year. Data are not available, however, whereby even an estimate can be made of the total quantity used since 1900.

If we attempt to obtain a total value of the reinforced concrete structures built, we find that in the absence of adequate statistics on the subject we can approximate the results by analyzing the steel required for various types of structures. We find, for example, that an office building will require reinforcing steel to the extent of about 5 per cent of its cost. In a school building as low as 2 or 3 per cent and on the other hand, in a concrete bridge 10 per cent of the total cost may be the amount of the reinforement. By getting an average for the various classes of structures and applying the distribution of tonnage to these classes, a general average can be obtained, as shown in Fig. 2. By applying this to each year, we find approximately that the total estimated value of reinforced concrete construction other than road construction in the last 25 years was $5,000,000,000.

In general, reinforcement may be classified as follows:

Bar reinforcement:
- Deformed bars, 12 types
- Plain bars:
  - (a) New billet
  - (b) Rerolled
- Twisted bars:
  - (a) Cold
  - (b) Hot

Wire products:
- Spirals
- Fabric:
  - (1) Woven wire
  - (2) Electric weld

Sheet products
- (1) Expanded metal
- (2) Metal lath
- (3) Ribbed lath

Accessories:
- (a) Metal forms:
  - (1) Column molds
  - (2) Metal floor forms
  - (3) Wall forms
- (b) Metal sash
- (c) Spacers, anchors, etc.

The present annual consumption of various products are as follows:

Spirals	35,000 tons
Wire fabric	100,000 tons
Metal lath	75,000 tons
Metal floor forms	15,000 tons
Bar spacers, and supports	2,000 tons

The foregoing gives a fair outline of the development of the concrete industry and its relations to the steel industry. We have seen how reinforced concrete industry in 25 years has grown from insignificance to its pres-

From a paper presented at the spring meeting of the American Iron and Steel institute, New York, May 21. The author is president, American System of Reinforcing, Chicago.

ent dimensions of about 1½ billions of dollars per year. We have seen the demand for reinforcing bars develop from a few thousand tons at the beginning of the century to nearly 700,000 tons last year. We have seen another 200,000 tons per annum develop in wire fabric and sheet products. We have seen slag, a by-product of the steel industry, absorbed by concrete construction to the extent of $5,000,000 per year. These are the figures for the present. What about the future? What may be expected 10 years from now, or 20? The rate of growth in reinforced concrete has been so rapid that it is quite improbable it can continue at the same rate even for another 10 years. Should it do so, the annual demand for bars will then exceed 1,000,000 tons, an increase of 50 per cent and similarly for the other products, which means that the reinforced concrete industry in 1935 will consume approximately 1,500,000 net tons of bars, wire and sheet products. This, in round numbers and cold type, is what concrete means to the steelmakers. It is not all clear gain, for concrete replaces a considerable volume of what would be structural steel construction, but on the other hand, it replaces and supersedes a great quantity of less permanent construction so that on the whole, there is considerable gain.

But mere tonnage figures do not represent all the gain. The consumption of steel is in direct proportion to growth in civilization. The building of permanent durable highways speeds up trade and stimulates industries. In the building of good roads reinforced concrete plays an important part and thus in an indirect manner aids in the development of the steel industry. The two industries are inseparably connected. This is the broader meaning of concrete to the steelmaker.

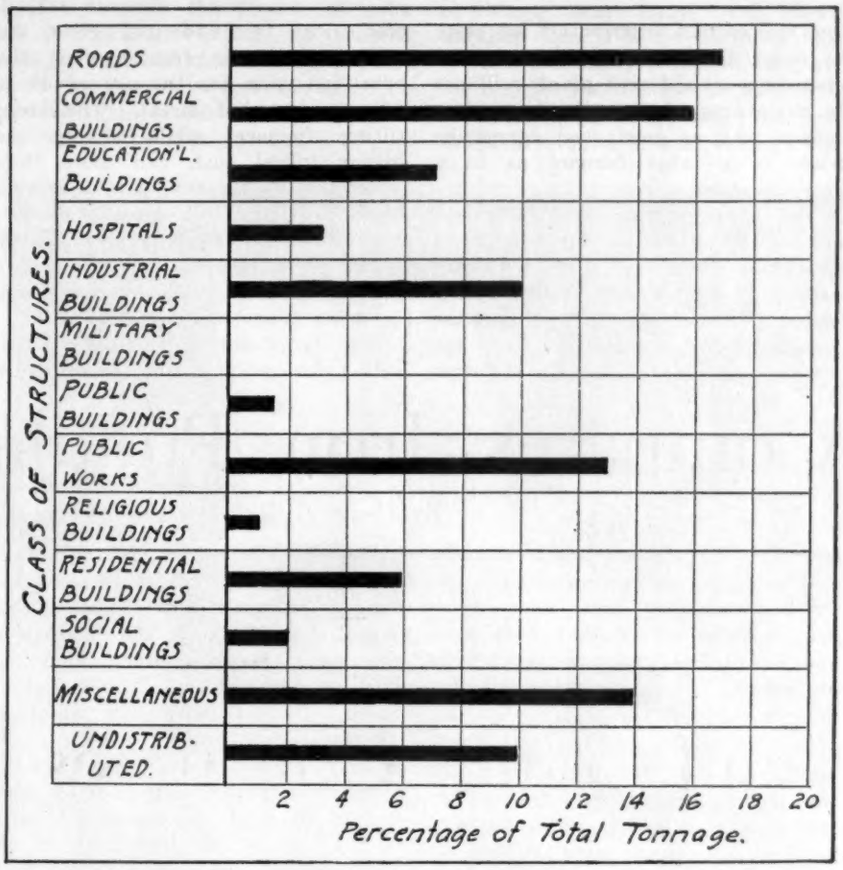


FIG. 2—DISTRIBUTION OF STEEL REINFORCEMENT TO VARIOUS CLASSES OF REINFORCED CONCRETE STRUCTURES

Furnace Capacities Show Increase

By Stewart J. Cort

OF ALL the open-hearth plants of the country there are practically none that are duplicates. In the majority of the older plants the open-hearth furnaces were built to take the place of bessemer converters, and in a great many cases the rolling mills were built first and the steel producing units added later. In others, where additional capacity was desired, furnaces were added.

With this method of growth, the engineer in a great many cases has been forced to make the layout suit the existing conditions, with the result that each individual plant has certain physical handicaps which must be duly weighed in making a comparison. An outstanding difference between plants is often not so much the actual time required to make a heat of steel as the difference in time lost through delays.

Today it is impossible to pay much attention to the nominal rated capacity of a furnace, the only measure being the size of heats tapped. The size of steel ladle, crane capacity and strength of crane runway are usually the governing factors in the weight of heats. The following gives some idea of present-day capacities:

Nominal rating, tons			Rated hearth area, square feet	Weight of heats tapped, tons
Stationary,	basic	50	370-400	60- 65
Stationary,	basic	60	440-475	70- 80
Stationary,	basic	75	500-540	80-110
Stationary,	basic	90	550-600	110-150
Stationary,	basic	100	650	140
Tilting,	basic	200	675	225
Tilting,	basic	250	775	250-270
Tilting,	basic	300	825	250-400

During the past 10 years there has been a decided increase in efficiency of open-hearth operation all along the line, so that today the production per furnace has been raised about 30 per cent.

This increase in production cannot be credited entirely to the larger heat but to a general improvement in materials charged, better valve and water-cooling, furnace design and a betterment of auxiliary equipment.

The capacity of an open-hearth furnace of any given size is so dependent on the nature of the materials charged, the kind of fuel used for melting and the quality of the product it is called upon to produce, that any comparison is worthless unless all these items are given the proper consideration. It is also necessary to standardize the methods of keeping open-hearth furnace production records and a uniform system of show-

From a paper presented at the spring meeting of the American Iron and Steel institute at New York, May 22. The author is superintendent, Saucon division, Bethlehem Steel Co., Bethlehem.

ing the correct distribution of costs in order that a comparison of the operations of different plants will not be misleading. Inherently there is no reason why as good steel cannot be made in a large furnace as in a small furnace.

The saving in man power in the operation of the large furnace is an important item, as more tons are produced per man with the accompanying lower labor costs. From the standpoint of capital invested, the 100-ton stationary furnace is the most economical to build and gives the most satisfactory results when the operation calls for the use of 40 to 65 per cent hot metal. The large tilting furnace, while having the higher initial cost, can more than offset this by the saving in operating costs, providing it is possible to utilize it to the best advantage; that is, either on a high steel scrap charge varying from 60 to 80 per cent scrap, or using it in the duplex operation.

The large tilting furnace is best suited for a large steel plant which is equipped with sufficient soaking pit capacity to charge 250 to 300 tons of ingots at a time, while a small steel unit can be more efficiently operated if the ingots are received in small increments.

The large furnace, while it is able to produce at a lower cost, will not be able to entirely displace the 60 to 75-ton furnace in specialty shops; that is, shops making a wide range of alloy steel for the merchant trade where only small tonnages are required of a given composition.

Compares Iron Puddling Methods

By Henry S. Rawdon and Samuel Epstein

THIS article summarizes results obtained in testing several lots of wrought iron made by a manufacturer who utilizes both hand and mechanical puddling methods in his regular practice in the production of wrought iron for pipe.

Part of the wrought iron tested was made especially for these tests, the raw material having been taken from the same cast of pig iron, separate portions of which were refined by hand puddling and by mechanical puddling, respectively. This particular lot of wrought iron proved rather unusual in its properties and of higher phosphorus content than the manufacturer's regular bar iron product.

Specifications for wrought iron take account of phosphorus in the iron only as the tensile and bending properties may be lowered below the acceptance values. High-phosphorus iron is generally regarded with some concern as being subject to cold shortness. The "sluggishness" of phosphorus in diffusing in solid iron even at high temperatures is well known.

Camp and Francis have emphasized the fact that the manufacturers of wrought iron are not adverse to the presence of a moderate amount of phosphorus in the iron since advantage can be taken of this to increase the tensile strength without sacrificing much, if anything, in the ductility of the iron. A phosphorus content as high as 0.15 per cent is indicated by these authors as normal in bar stock. The tensile properties of wrought iron of varying phosphorus content given by them show that the degree of the deleterious effect of phosphorus is related to the method of preparation of the iron, that is, subsequent to the puddling process.

The two lots of iron used in the tests are referred to as Lot 1 and Lot 2. Each lot consisted of two round bars 12 feet long; those of Lot 1 being ¾-inch diameter, and Lot 2, 1-inch. Of the bars of Lot 1, selected by the manufacturer from stock on hand, one had been made by the hand puddling process and the other by a mechanical puddling method. Special precautions were taken in making the bars of Lot 2. The pig iron used was taken from one cast from the blast furnace, part of it being refined by the ordinary hand puddling method and another part by the mechanical puddler. Lot 1 was regular bar stock, while Lot 2, which was rolled in bar form for convenience in testing, was pipe stock. The method for producing the finished bar for testing from the puddled bar was the same for each lot, the slab piling method and "single refining" only being used in each case. The compositions of the different irons are as follows, the hand-puddled iron being marked "H" and the mechanically puddled by "M":

	Lot 1		Lot 2	
	H	M	H	M
	per cent	per cent	per cent	per cent
Carbon	0.020	0.050	0.050	0.030
Manganese	0.020	0.021	0.020	0.040
Phosphorus*	0.120	0.140	0.291	0.173
Sulphur	0.021	0.014	0.025	0.014
Silicon	0.210	0.140	0.250	0.170
Slag and oxides	2.900	1.100	1.750	1.900

*"Nominal" phosphorus content; no account was taken here of the fact that the phosphorus is divided between the slag and the iron.

The results of the tests may be summarized as follows:

1. The tests of two lots of wrought iron made by two distinctly different puddling processes have not shown anything to indicate that the hand puddled product cannot be equaled in an iron made by a mechanical puddling process.

2. The phosphorus content of the raw material can be reduced to a lower value more readily by the mechanical puddling process carried out on a relatively large scale than by the ordinary hand puddling process.

3. Variations in properties, pronounced enough to warrant rejection of the iron under current American specifications, may occur within the limits of a single bar, particularly if the phosphorus content is somewhat above the normal value.

From a paper presented at the spring meeting of the American Iron and Steel institute, New York, May 21. The authors are physicist and associate scientist, respectively, bureau of standards, Washington.

Coke Tests of Value to Furnaces

By William A. Haven

OF THE several raw materials used in the production of pig iron the one most likely to determine the success of the operation is the coke, since upon the quality of the coke vitally depend the driving rate of the furnace, the smoothness of its operation and the burden ratio; and these phases of furnace practice, by their effect upon the tonnage, ore losses and fuel consumption, largely establish cost of product. Various methods for testing coke have received much attention from blast furnace operators, but attempts to establish comprehensive cause and effect relations between coke properties and furnace practice have not met with general success.

A series of tests aimed at the de-

From a paper presented at the spring meeting of the American Iron and Steel institute, at New York, May 21. The author is superintendent of northern furnaces, Republic Iron & Steel Co., Youngstown, O.

termination of such values has developed at the Youngstown plant of the Republic Iron & Steel Co. and has turned out to be of real operating usefulness.

Oxygen is used for the test, rather than air, for several reasons which are good although not readily apparent. Oxygen in commercial tanks is purer and more readily handled than compressed air from the usual laboratory source. With oxygen, the combustion is so intense that even with so small a sample of coke the temperature of the furnace is not reduced, while in using an excess of air the initial temperature cannot be maintained. The volume of oxygen required passes through the tube at a speed which does not disturb the coke particles, whereas the volume of air to provide an equal weight of oxygen would have a velocity sufficient to blow the burning particles out of the boat.

High Ash A Detriment

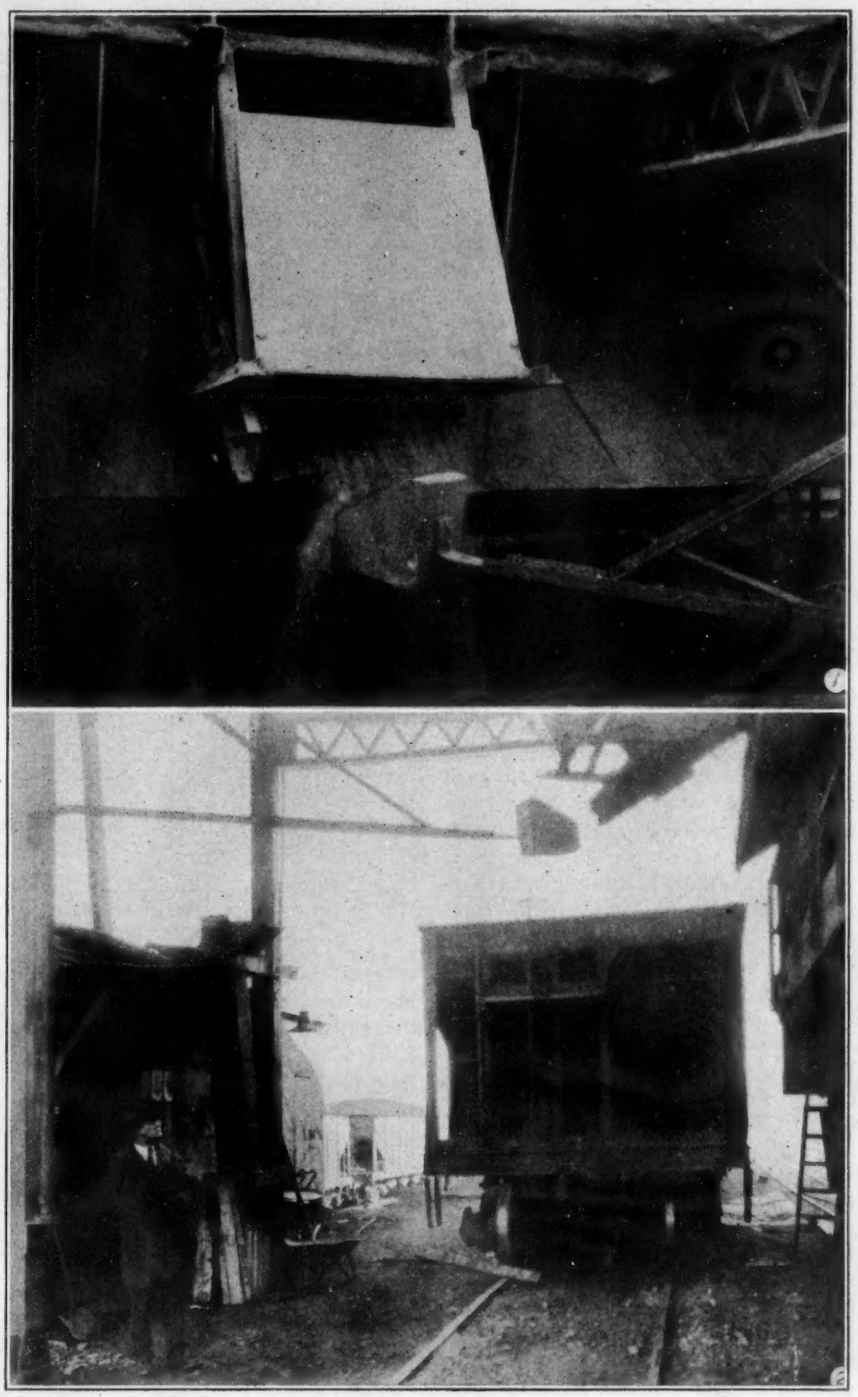
Comparison of the burning speed with the chemical analysis of several different kinds of coke, confirms the expectation that high ash is a detriment to rapid combustion. That cellular constitution also plays an important part can be shown by microscopic examination of the samples.

The apparatus used in the tumbling or rumbler test is a steel drum, 36 inches inside diameter and 18 inches in depth; two 2 x 2 x ¼-inch angles with their backs to the direction of rotation are fastened to the inside of the drum.

The sample for the tumbler is carefully sized through a 3-inch square mesh screen upon a 2-inch screen, and a 10 kilogram portion (22 pounds) placed in the drum. The drum is rotated for one hour at the rate of 23.6 revolutions per minute, which subjects the sample to a series of moderately severe impacts and a very considerable amount of abrasion. The larger sizes coming from the drum are well-rounded in shape. After the coke is taken from the drum, the effect of the tumbling upon it is measured by passing the samples over a series of standard square screens from 1 inch to ½-inch, expressing the amount remaining upon each size in percentage of the original 10 kilogram sample.

We have found the tumbling test particularly useful in justifying the use of low-volatile coal in making coke for the blast furnaces.

A daily sizing test has for some years been a routine procedure at Republic Iron & Steel Co.'s Youngstown coke plant. Samples are taken at hourly intervals by passing a bucket through the stream of coke as it discharges from the screens into the car, the bucket being of sufficient area and volume to secure a sample representing a complete cross-section of the coke stream.



SAMPLING DEVICE AT COKE PLANT SCREENING STATION. UPPER PHOTOGRAPH SHOWS THE BUCKET PASSING THROUGH THE COKE STREAM; LOWER, METHOD OF SWINGING BUCKET

Just what the proper size for blast furnace coke may be is one of the questions most widely discussed and debated by coke oven and blast furnace men at this time, and it is probable that there is no one size which is best suited for all conditions. It is quite likely that for hard or lumpy ores larger and slower burning coke is more desirable than for fine and easily reducible ones, and for each of the many combinations of hard and soft, lumpy and fine ores, which are found in our northern furnace practice, it is not unlikely that there is a particular size which is better than any other.

Robert C. Lee has been appointed receiver of the Mechanical Metal Stamping Co., Inc., 931 Flushing avenue, Brooklyn.

Theory of Rolling Steel

(*Concluded from Page* 1369)

than the remaining rolls to afford efficient operation.

To minimize the number of passes on the 3-high and to be able to roll fast, the second last pass also may be put on a 2-high. The arrangement is about as follows:

Pass No. 1 on the 3-high below
Pass No. 2 on the 3-high above
Pass No. 3 on the 3-high below
Pass No. 4 on the 3-high above
Pass No. 5 on the 2-high below
Pass No. 6 on the 2-high above

Fillets are provided at the points in the following pass when the groove is open; they are purposely chosen larger for open and smaller for closed passes. The position and size, therefore, depend on the type of this opening. The opening is denoted in the pass drawing, as shown in Fig. 128. If this were not done and the roll drawing was finished by another, the fillets of the one and the openings of the following pass might not correspond.

The amount of spring in the design at the parting also can be entered. This was not done in Fig. 128 because it is dependent on the size of the roll diameter and on the layout of the passes on the rolls. If, for example, all the passes are placed on alloy rolls and a spring of 0.079-inch is provided in the finishing pass, 0.157-inch in the first and second passes on account of the large draft, and, 0.118-inch in the other passes then these values are entered between the parallels which denote the parting lines of the rolls at the pass openings. The roll drawing is finished accordingly and the rolls turned. In the roll stands the latter are pressed against one another by the spindles. If on entering the stock they actually spring the amount previously mentioned, the profiles have the desired heights during the pass. If they spring less, the upper roll is raised somewhat before the pass. If they spring more, the pass becomes too thick in the parts of the profile having direct draft. The web of pass No. 3, therefore, would no longer enter the edging pass No. 4 or would wedge itself in and thus endanger the rolling. It must be obvious that the spring design always should be made larger but never smaller than the actual spring.

Spring Causes Variations

Conditions are different if passes Nos. 1, 3 and 5 are placed on one roll, and passes Nos. 2, 4 and 6 on the second set of a double 2-high or a 3-high stand. If pass No. 2 were given a spring of 0.157-inch, pass No. 4 a spring of 0.118-inch and pass No. 6 a spring of 0.097-inch, the rolls could only be pressed together 0.079-inch because of pass No. 6; and, passes Nos. 2 and 4 become too heavy. If, however, a spring of 0.157-inch is provided in all passes, the finishing will be 0.079-inch too low. To pull up the rolls each time between the second and third and the third and fourth passes would not be feasible. In such a case nothing remains but to give all passes the same spring, as in the example 0.079-inch, and for the rest to gain 0.039-inch and 0.078-inch by holding the particular pass lower. All heights then would have to be reduced such as 0.079-inch for pass No. 2 and 0.039-inch in pass No. 4. The amount of spring, therefore, can only be set, if the roll diameter and the manner of distributing the passes are known. This, as a rule, is given first in the roll drawing. The roll turner uses the templates finished according to the pass design and arrives at the reduction of the heights of passes Nos. 2 and 4, which are

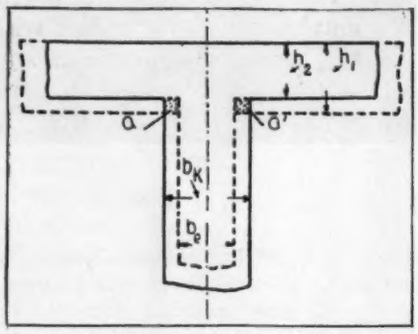


FIG. 129—ONSET AT THE TRANSITION OF WEB AND HEAD

entered on the roll drawing. In holding the templates, which are too high, the rolls are pulled apart 0.118-inch with pass No. 2 and 0.157-inch with pass No. 3, while the distance between them, in the case of template 6 as in the setting into the stands, amounts to 0.079-inch. It is better though, to keep this reduction in mind when designing the passes, so that the roll turner has nothing to do with this. For the remaining passes the unequal spring is important only where the profile is turned 90 degrees; it is insignificant where the profile lies flat, as with channels or H-beams.

An absolute regular pass design never is encountered because the elongation, at least in the final passes, must be equal for all parts of the profile. That part always in the next pass experiences a greater elongation, which remained behind in the previous pass. As previously mentioned such pass designs are known as regular. From the second to the sixth pass the total elongation in the right side of the head is 0.508 ÷ 0.274 or 1.85 and in the left side of the head 1.7 or an average therefore of about 1.78. In the web it is 1.79 or approximately equal.

The elongations from pass No. 1 into pass No. 2 shown in Table IX refer to the ideal halves of the head prolonged up to the section with the axis which is designated *o* in pass No. 1 of Fig. 128. If only the horn-shaped free surfaces of the head considered in pass No. 1 were taken as a basis for calculation, the disproportion of the elongation between the head and web from the first into the second pass, would become considerably larger. The first pass already lies in the zone of irregular pass design and with this, in most cases, the exact and definite division of the individual parts of the profile cease. Either a greater or lesser number of hypothetical assumptions must be made or the determination of the elongation omitted and the filling judged according to the method outlined in the discussion of fillets.

Blunt Corners Provide Spread

The first pass often is called the bell pass. The stock entered in this pass is a blunt cornered square or gothic turned up on one corner, having a length of side of about 2.047-inches or a diagonal length of about 2.864 inches. The custom is to start with a square equal to the width of the head of the tee, or 1.181 × 1.181-inch for a 1.181-inch tee, 3.150 × 3.150-inch for a 3.150-inch tee, etc. The blunt corners provide the spread and the relative draft, which with sharp corners is about 40 per cent, still is reduced slightly.

The spread of the bell pass is assumed as 0.787-inch which is somewhat larger than three times the normal spread or 0.3 × 0.630 equals or approaches 0.189-inch. Precaution is necessary the same as with fillets. Pass No. 2 does not fill in the width, with the result that pass No. 1 is turned somewhat deeper. If on the contrary it had been chosen too deep, all the rolls would have had to be turned down completely, to receive a shallower pass.

Edging and lateral springing passes such as pass No. 2 in Fig. 128 are narrower than the profile leaving the roll. In the same way passes Nos. 5 and 6 are broader than the stock after the pass. It should be remembered that the stock does not always conform to the shape of the pass. In new pass designs where the differences are considerable, the outline of the stock after the pass also should be incorporated in the layout as was done in Fig. 128, passes Nos. 5 and 6.

Editorials

Better Merchants of Steel

IN POINT of importance, timeliness and possible significance, the high spot in the spring meeting of the American Iron and Steel institute unquestionably was the address by Mr. Grace. Using as a text the low percentage of earnings in the steel industry as related to capital invested, he developed it convincingly to its logical conclusion, which is that steelmakers should be better merchants.

It is doubtful if a more appropriate keynote for a meeting of iron and steel executives could be found. In view of the fact that 27 important companies in the steel industry last year earned only $4.51 for each $100 of capital whereas automobile companies earned $24.60 on the same basis, as shown in last week's IRON TRADE REVIEW, Mr. Grace is fully justified in emphasizing the need for better merchandising. His remarks on profits, in which he pointed to the injustice of public indictment of business because of its earnings, were particularly impressive.

In selecting the president of the Bethlehem Steel Corp. from the groups of junior leaders of the steel industry for a formal address before the institute, Judge Gary inaugurated a step which won instantaneous approval. The members are practically unanimous in hoping that this act will prove to be the forerunner of a policy which will lead to the gradual addition of others to the select list of institute speakers.

Public Has The Final Word

AS THE President aptly stated in signing the Watson-Parker bill, another experiment in the adjudication of railroad labor difficulties is to be undertaken. An important but moot provision of the Transportation Act of 1920 has been eliminated with the abolition of the railroad labor board, direct public participation in railroad labor matters withdrawn, and self-government set up within the railroad industry.

By reason of its equal representation of the public, the railroads and labor, the board promised much but actually satisfied few. The representatives of the railroads and of labor proved to be wholly partisan, and the public group—in reality the judge—was subjected to unexpected pressure. The effect was to place the litigants on the bench.

Now the railroads and their labor are to meet directly. There is provision for arbitration, and if this fails the President has authority to create a board of mediation with final powers. The public steps out on the sidelines, but will continue to be the final arbiter.

Business Must Prove Itself

UNQUESTIONABLY the attitude of the present administration is to refrain from interference with legitimate business merely because it is "big business". This policy and the reasons for it were set forth clearly in a recent radio address by Secretary of the Treasury Mellon, who pointed out the justice of the view of President Coolidge that business and industry, so far as possible, shall work out their own problems, provided they conform to law.

Secretary Mellon also stated that American labor is beginning to realize the common interest it has with industry in building up the great industries which are the sources of wealth for all. Labor in some of the European countries has not yet learned that it is impossible for an industry to pay high wages when that industry does not prosper, even to avert strikes. American labor and industry also have learned that class antagonisms and class warfare have no place in the scheme of things in this country.

Steel Inventory Position Good

ALTHOUGH iron and steel companies in 1925 did not show up in a dazzling way from the standpoint of earnings their current financial position reveals the result of careful husbanding of resources. As shown by the study of the financial situation of 27 iron and steel companies in the May 20 issue of IRON TRADE REVIEW aggregate current assets of these companies amount to $1,149,870,190. Current liabilities are $233,864,285. This is a ratio of current assets to current liabilities of about 5 to 1. The industry has a net working capital of about $1,000,000,000.

From this it is clear that the industry is well prepared in the main to take care of the requirements either of an era of expanded business or to weather a slackening of activities. One notable fact disclosed in the study of steel company finances is that the proportion of inventories to gross working capital of leading companies declined in 1925. The ratio of inventories to gross working capital in 1924 was 51 per cent and in 1925 it was 49 per cent.

This gives striking evidence of the fact that

although outputs in 1925 were beyond any previous record there was no piling up of material in the hands of producers. In other words high operations were in direct response to the demands of consumers. From this it seems clear that the steel industry did not go into 1926 with a burdensome inventory and that outputs have been closely regulated by consumptive requirements without buying for stocks.

Scrap Industry Seeks Stability

THE strain to which the iron and steel scrap trade has been subjected, especially since the last quarter of 1925, is being reflected in increasing efforts at organization, of which the formation of the Iron and Steel Scrap association at Chicago, is the latest manifestation. These groupings propose to eliminate unethical practices, clarify specifications, adjust freight rate inequalities and educate in the matter of costs—these objects all flowing into the basic purpose of stabilizing the trade and enabling it to sell at a living price.

More than any other phase of the iron and steel industry, the scrap trade still evidences the dislocation growing out of the World war. It has been an overcrowded field, largely because wartime profits have enabled some newcomers to hang on. However this financial backlog is slowly but surely wasting away. This oversupply of dealers, as well as of material, has led to wildcat speculation, trading on impossibly narrow margins and sales of yard material below cost. Organization seems to be presenting itself as a curb.

In many districts scrap is priced the lowest in three or four years. It is patent that, at Chicago for example, a yard cannot take in steel, prepare it for sale as heavy melting steel, and come out whole at $12.50 to $12.75, delivered. Business on this basis becomes a struggle in which only the financially fit survive. Then again, consumers of scrap have been banding together, staggering their purchases and buying scientifically.

A curious but logical sequence is that low prices, which have resulted largely from the sharp competition of numerous dealers, have tended to prolong the period of adjustment. Only half the capital is required to trade in scrap at $12 per ton as at $24. Likewise the same capital that turns over one ton at $24 at a 50-cent profit can turn over two tons at $12 at a 25-cent margin.

The entire iron and steel industry will benefit if the scrap trade can right itself and stamp out certain evils which would help to place it on a sound financial and economic basis.

What Our Readers Are Thinking

Railroad Efficiency Steadily Increasing

To The Editor:

I have heen holding on my desk until such time as I could write you about it, the editorial in your issue of Dec. 24, 1925 entitled "How Waterways Will Help."

Without in any way depreciating the value of waterways, I wonder if it is not true that the railroad machine of the country is yet capable of handling a much larger increased tonnage than many really suspect? When we realize that the record breaking tonnage of 1925, including the peak load in the bituminous fields was handled without car shortage; while at the same time a constant car surplus existed, it leads us to the conclusion that with the proper co-operation of the shipping public and the receivers of freight, including the prompt unloading and turn-round of equipment and with the innovations which are constantly being made to increase the capacity of the railroads, that a far greater volume of traffic can be handled in the future with relatively fewer cars in the service.

In no section of the country except Florida has the transportation machine been unable to meet public demand in full. In fact, for at least nine months of each year a substantial proportion of the existing facilities are looking for business. One of our great problems in this country it that of spreading out the peak load, which always comes during the fall, so that a greater tonnage can be transported during the spring and summer months.

No one thing can make a greater contribution to this result than the confidence on the part of the public that they are going to receive constantly dependable transportation service this has had the resut of eliminating high and costly inventories, of stabilizing purchases more evenly throughout different months of each year and has reacted upon the producer in that his market has been more dependable and his prices more steady.

The railroad transportation task and its limitations are largely governed not only by the extent of actual production itself but also by the methods of distribution, trade practices, and market conditions which are largely within the control of the buyer and seller, governed, of course, to some extent by economic necessities.

Through the advisory boards which have been organized in twelve operating districts of the country, the public and the carriers have set up voluntary forums by which the business necessities of each line of industry, including the carriers, are currently analyzed and dicussed; facts and conditions are made patent to the public and shippers of each industry, and a definite measuring stick of the volume of transportation required in each territory is set out in advance of actual need every three months.

With such informative and co-operative action between the carriers and the public and considering the mobility of the transportation machine as it now exists, it is our opinion that it will be a good many years before the waterway must be substituted for the railroad, predicated upon any railroad's inability to handle traffic offered.

DONALD D. CONN, *Manager, Public Relations Section American Railway association.*

Washington, April 29.

The Reader's Page

Vol. LXXVIII, No. 21 IRON TRADE REVIEW May 27, 1926

Describes Early Days of Ohio Valley Iron Industry

IRON TRADE REVIEW has given its readers many articles of historical interest in the iron and steel industry, believing that good and authoritative descriptions, especially when written by those who participated in the affairs narrated, are of permanent value. In this issue W. W. Hearne of Philadelphia contributes the first of two articles of a reminiscent nature on the pig iron business in the Ohio valley as constituted a generation or two ago. Intimate acquaintance with some of the pioneers of the industry, personal experiences and the ability to describe them as they were give to Mr. Hearne's two articles a special charm. He takes us back to the days when the Hillmans, the Means, the Hulls, Col. Marting, Matthew Addy, Rogers, Brown, C. H. Domhoff, E. L. Harper and many others were active—a story of persons and incidents.

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IRON TRADE REVIEW is published every Thursday by the Penton Publishing Co., Cleveland, O. Member, Audit Bureau of Circulation; Associated Business Papers, Inc.; and National Publishers Association.

Charles J. Stark .....Editor
Earl L. Shaner .....Managing Editor
John D. Pease .....Advertising Director
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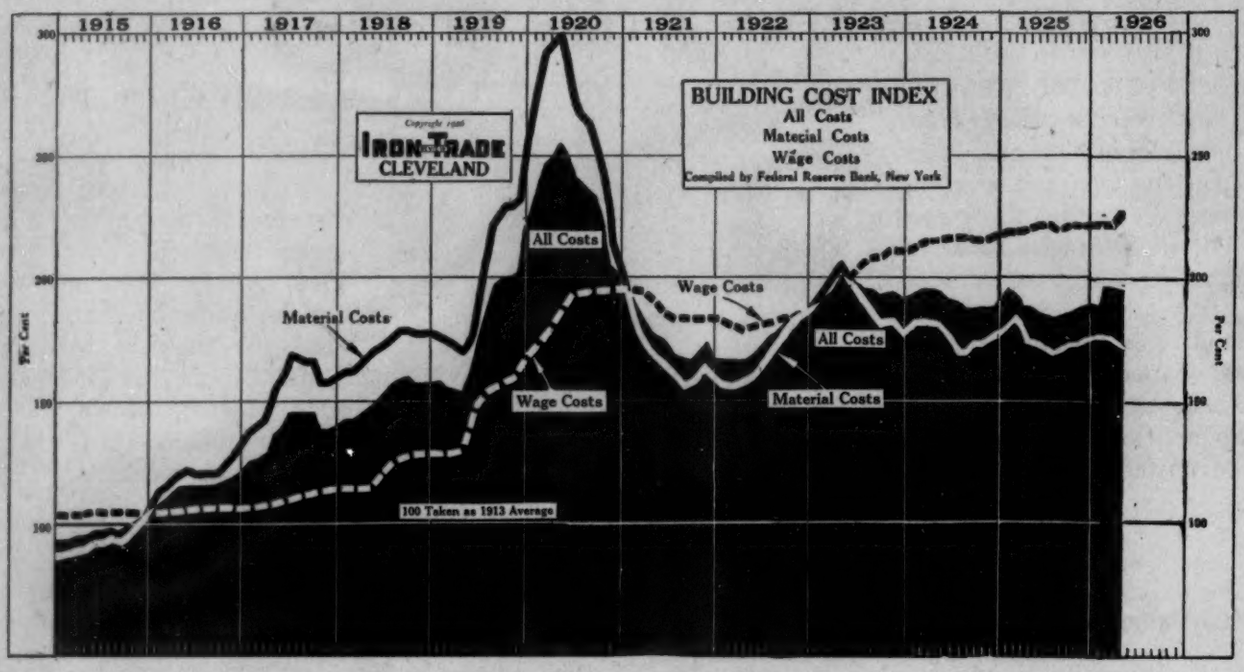
Branch offices: 1037 Old South Bldg., Boston; 1147 People's Gas Bldg., Chicago; 408 Edwards Bldg., Cincinnati; 2208-2206 No. 220 Broadway, New York; 2148-49 Oliver Bldg., Pittsburgh; 24 California street, San Francisco; 401 Westory Bldg., Washington. Foreign offices: Prince's Chambers, Birmingham, Eng.; 2-3 Caxton House, Westminster S. W. 1, London; 23 Rue de la Bienfaisance, Paris, France; Kurfurstendamm 136, Berlin-Halsensee, Berlin, Germany.

Cable address: *PENTON*, Cleveland; *IROTRAPEN*, London.

Terms: Subscription in United States, Cuba and Mexico, $6 per year; in Canada, $8.50 per year and in Great Britain and other countries, £2:0:0 per year. *Entered at the Postoffice at Cleveland as Second Class Matter.* *Copyright 1926 by the Penton Publishing Co.*

The Business Trend



Building Labor Costs Reach New Peak

By JOHN W. HILL, Financial Editor

ONE of the most curious paradoxes of the present season has been the advance in wages in the building industry at a time when commodity prices and living costs are declining. As shown by the accompanying chart the index of building wages now stands 127 per cent above the 1913 level.

ONE month ago the wage level stood at an index of 123 per cent over 1913 and one year ago it stood at 118. The labor cost of building is now at the highest peak for modern times. It is 16 per cent higher than the topmost level attained in the inflation year of 1920, according to the computation for the country as worked out by the New York federal reserve bank.

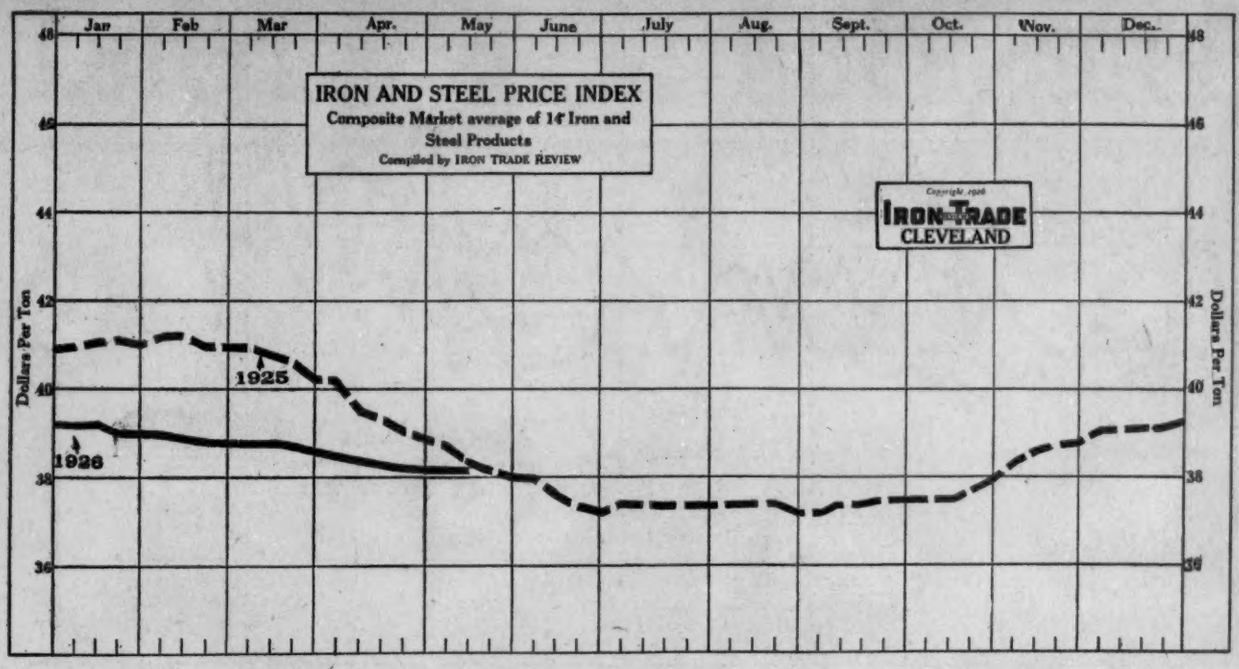
WAGES in the building industry this year have advanced under the impetus of the great building boom. This was sufficient to push wages higher, despite a falling level of general prices and an absence of wage advances in other important lines. Sporadic building labor strikes occurred in various centers. It is significant that in some higher wages were not won.

THE advance in building wages is partly offset by declines for material. Material is now 73 per cent over the 1913 average against 76 per cent one month before. The total cost of building is 95 per cent above 1913 or nearly double the prewar level. It is a trifle higher than it was one year ago, but somewhat lower than in 1923.

THE building situation is being watched with close attention by students of business this season. Much of the business prosperity of the past few years has been based upon the building boom and general business is largely bound up in its destiny this year. Signs have been accumulating that the country has overstepped itself in the matter of making up the shortage of housing and of office building.

BUT vast improvement projects and public utility construction are under way, in keeping with the advancing needs of the country. This will serve to take up at least some of the slack of lessened housing building. Higher costs, through the element of wages will have a deterring effect and for that reason they are inopportune just at this stage of the cycle.

The Business Trend

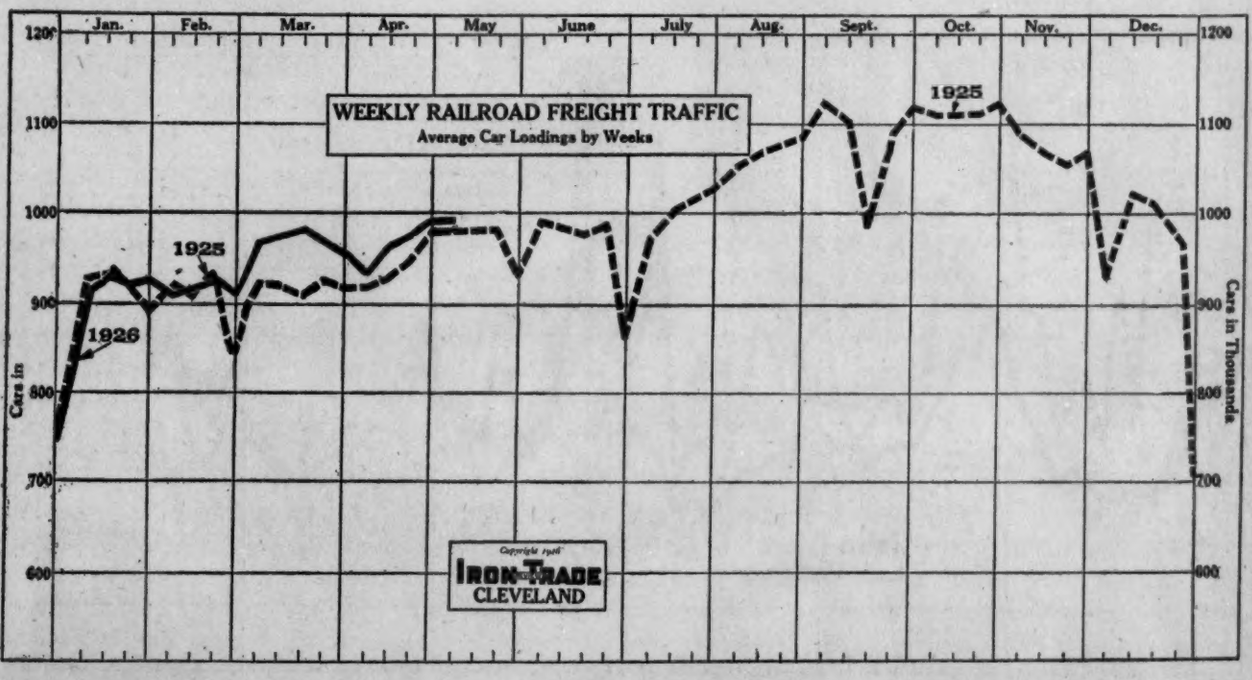

IRON AND STEEL PRICE INDEX
Composite Market average of 14 Iron and Steel Products
Compiled by IRON TRADE REVIEW
IRON TRADE CLEVELAND
Jan Feb Mar Apr. May June July Aug. Sept. Oct. Nov. Dec.
Dollars Per Ton
1925
1926

Steel Prices

SLUGGISH conditions continue to mark the iron and steel markets. Prices in the last week as measured by IRON TRADE Review's composite market average of 14 leading iron and steel products made the sharpest drop for any time since last August. The average fell to $38.14 a ton compared with $38.34 one week before and $38.37 one year ago. The average now is at the lowest point since October. Weakness has developed in steel bars, in sheets and in pig iron. Scrap also has continued downward.

Car Loadings

NO MARKED slowing down in the business situation is revealed by the record of freight car movements. During the week ended May 8, revenue freight car loadings totaled 596,527. This was an increase of 13,000 cars over the corresponding week one year ago and of 88,000 over the corresponding week of 1924. There was an increase of 886 cars over the preceding week of this year. Freight traffic is large because it is reflecting the movement into the channels of consumption of great industrial outputs.



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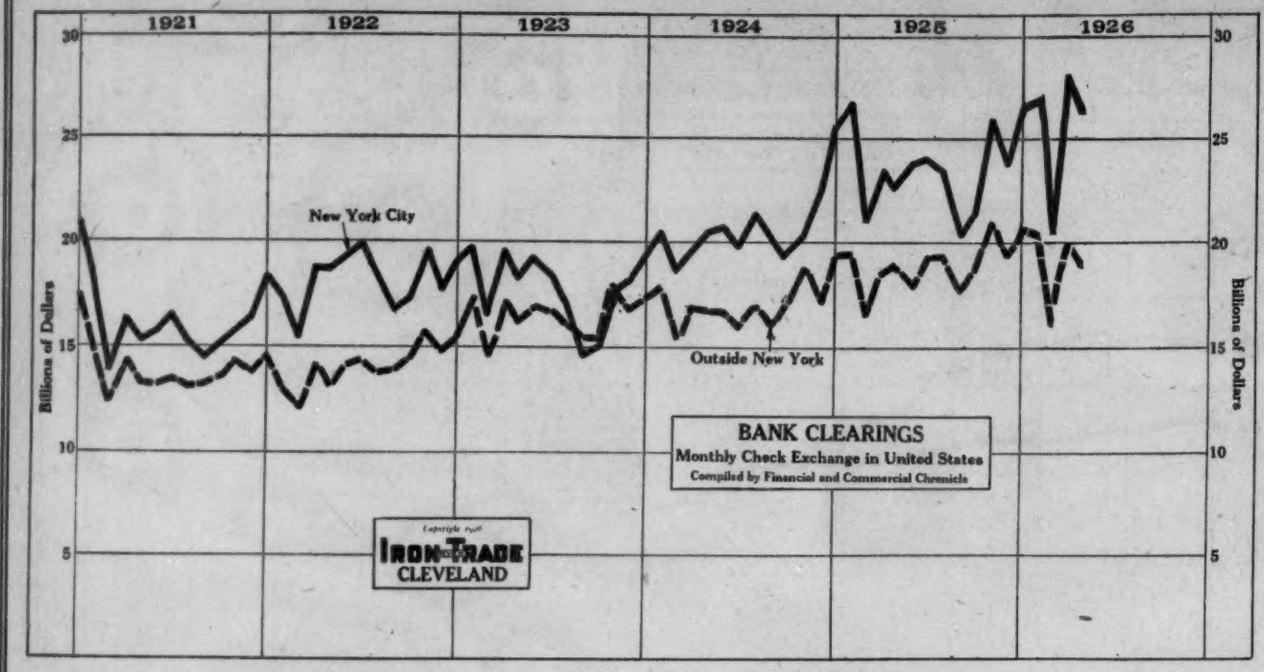
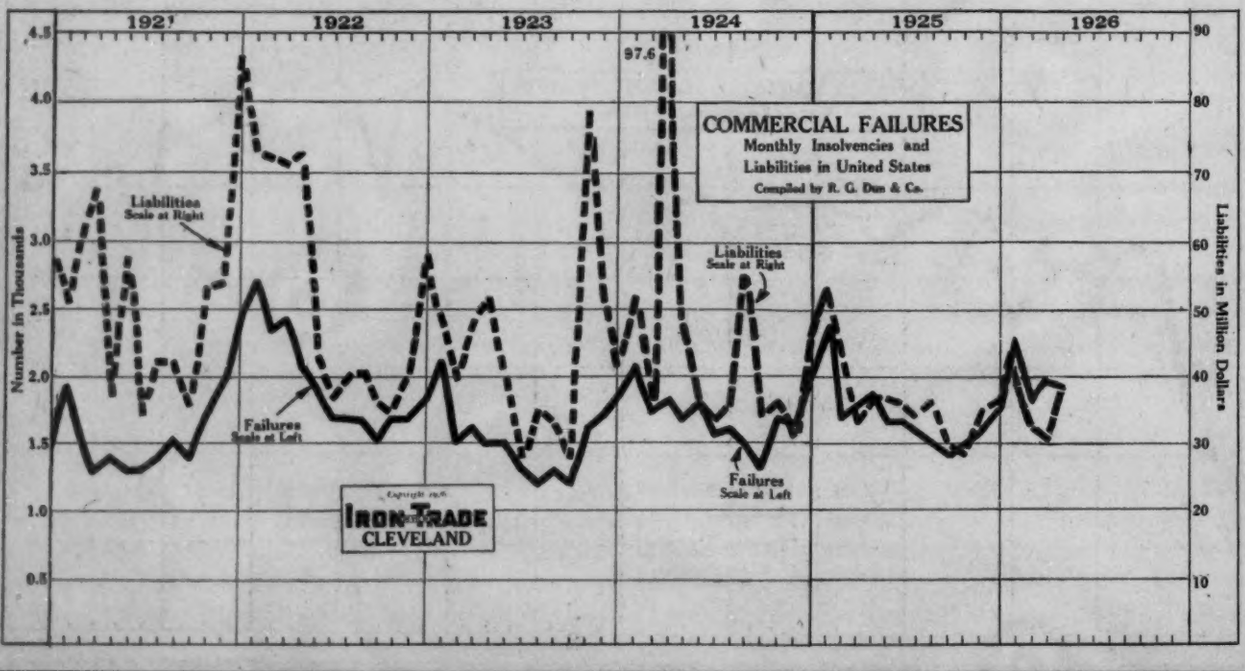


Bank Clearings

APRIL brought an increase in the volume of bank clearings of 10 per cent for the whole country, compared with the corresponding month one year ago. The total for April was $45,536,000,000 the highest figure ever registered for the month of April. Outside of New York City the increase for the month was 5.5 per cent reflecting a higher level of business. The increase in the volume of clearings in New York City increased by 13.6 per cent, the result of a greater volume of stock market transactions.

Failures

WITH the single exception of the short month of February fewer insolvencies occurred among commercial firms in the United States during April than in any preceding month this year. There were 1957 failures compared with 1984 in March and 2296 in January. In April, 1925, there were 1939 failures. A number of large insolvencies during the month swelled the aggregate liabilities of $38,487,000 to a point above the amount for any previous month since February, 1925, except for January of this year.



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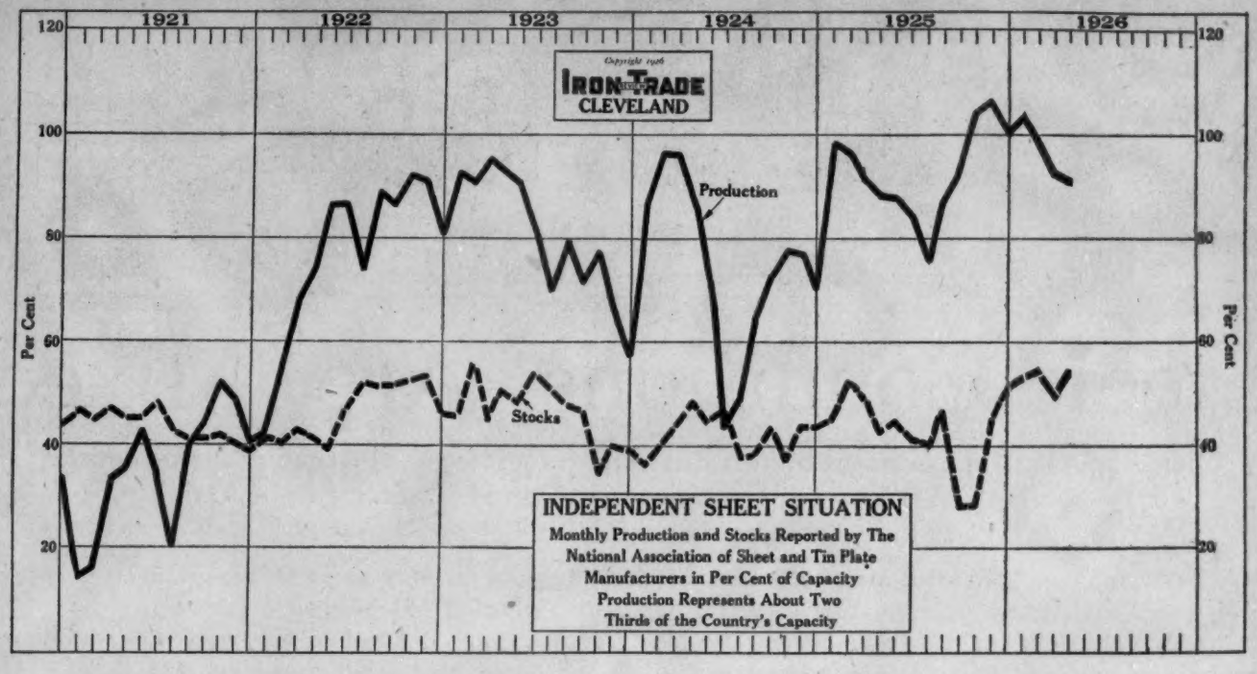
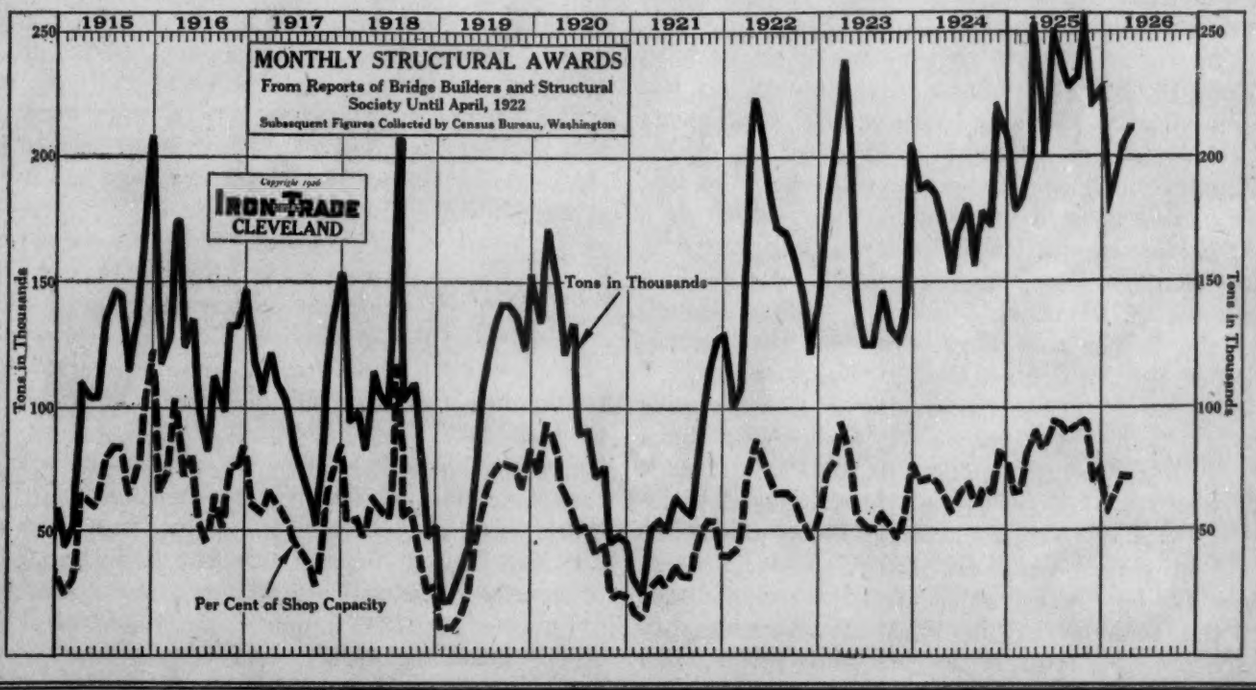


Independent Sheets

CONDITIONS in the sheet trade have been growing less favorable. In April there were declines compared with March, in sales, in production, in shipments and in bookings. At the same time there were gains in stocks on hand. Sales for the month dropped from 90 per cent of capacity in March to 77 per cent in April. Production fell from 94 per cent to 89 per cent and unfilled tonnage from 157 per cent to 144 per cent. Stocks on hand increased from 51.5 per cent in March to 56.4 per cent in April.

Structural Awards

APRIL brought no slowing down in the kind of building activities which require structural steel. During the month fabricating shops report sales representing 71 per cent of their capacity as compared with 68 per cent in March and 88 per cent in April, 1925. Computed sales for the month were 216,550 tons against 207,000 tons in March and 231,000 tons in April, 1925. April shipments were 80 per cent of capacity and the computed shipments were 244,000 tons. March shipments were 247,050 tons or 81 per cent.



Steel Conditions Are Mixed

Some Spots of Improvement Shown But Shipments Keep Well Ahead of New Tonnage —Further Curtailment of Operations Forecasted—Building Steel Activity Is Large—Higher Duty Put on German Imports

NEW tonnage booked in May by steelmakers was moderately greater than in April but shipments have kept well beyond the incoming volume so that further curtailment of operations is in sight unless a more decided pick-up appears soon. This situation arises because a considerable portion of the present favorable operations of 80 to 85 per cent is due to the spread-out deliveries on business entered some weeks ago which now is not being replaced. The spotty elements of the market remain marked both as to territory and product. The sustained gain of new business in Chicago territory stands out against the difficulty of other districts to hold their own. One general fact may be emphasized, however, and that is that new business at this time is substantially ahead of the corresponding period in 1925, ranging from 25 to over 60 per cent, the latter representing the Steel corporation's gain.

The recent general recession of steel bars to 1.90c, Pittsburgh, putting this material on the same plane as plates and structural shapes, seems to have imparted a stabilizing effect to these three major lines. Even the extra large buyers are finding difficulty in shading these prices.

Tin plate production and shipments for the first half promise to reach a new high record. The tonnage of the leading interest, it is indicated, will be 10 per cent above the corresponding period of 1925, which set the previous record.

Some Gains Shown

Steel bar buying of Chicago mills has recovered to the early April and inquiry to the late March basis but is still slipping at Pittsburgh. A slight improvement has held in sheets especially light gages. Present bookings by Chicago mills are 25 per cent ahead of the same period in 1925. May business in wire products also is 25 per cent better than May, 1925, with leading makers. Welded pipe shipments in May were increased over in April. Strip demand has slackened further.

Big Tonnage Awarded

Another big week has developed in building steel with 51,555 tons awarded. This is the second largest week of the present year. Railroad bridge work is contributing a good tonnage. Prospective work continues in promising volume. A proposed elevated motor roadway in New York, plans for which now are before the board of estimate, will require about 50,000 tons. Another big apartment hotel with subordinate structures, developing in New York will need 15,000 to 20,000 tons.

Plate work continues active especially in the West where 20,000 tons was directed to Chicago mills in the week. The Union Oil Co. placed 4500 tons for tanks and a gas holder placed for Detroit calls for 4500 tons. Two independent mills divided 10,000 tons for two ore freighters placed with a lake yard. Bids are being taken on a 4000-ton water line for New York.

The decline in scrap has gone a stage further this week and new low levels have been reached in some territories but the downward pace has been slowed down, especially at Chicago.

German Duty Lifted

An offsetting duty has been ordered assessed by the treasury department on importations of German pig iron and rolled products where export bounties are paid to the manufacturers under the agreement with the German Raw Steel syndicate. The amount of the additional duty will be determined after further investigation by the customs service. Recently a similar countervailing duty was laid on pig iron from India and this has had the effect of greatly reducing these imports.

Imports of 112,255 tons of iron and steel in April, including 55,000 tons of pig iron, were the largest since January, 1923. Exports of 194,-

449 tons also were the largest since January, 1924.

Buying of pig iron for third quarter is slow to develop and the market keeps sluggish. May shipments of iron at Chicago and some other districts were equal to April. Four sellers with headquarters at Cleveland booked a total of 102,000 tons of new orders in May which is something below a normal operating equivalent. Prices are soft. Buffalo iron has been sold $1 lower and Eastern Pennsylvania is down 50 cents.

IRON TRADE REVIEW composite of fourteen leading iron and steel products fell again this week to $38, down 14 cents. The composite is almost identical with a year ago, when it was $38.04.

Prices, Present and Past

Representative Market Figures for This Week, Last Month, Three Months and One Year Ago

	May 26, 1926	April, 1926	Feb., 1926	May, 1925
PIG IRON				
Bessemer, valley, del., Pittsburgh	$20.76	21.56	22.76	21.36
Basic, valley	18.00	18.80	20.00	18.85
Basic, eastern del., eastern Pa.	21.75	21.75	22.50	21.50
*No. 2 foundry, del., Pittsburgh	20.76	21.06	22.26	20.61
No. 2 foundry, Chicago	21.50	22.00	23.00	21.25
*Southern, No. 2, Birmingham	22.00	22.00	22.00	20.00
*Southern Ohio, No. 2 Ironton	19.50	20.40	20.60	19.50
**No. 2X, Virginia furnace	23.00	23.25	23.25	23.25
**No. 2X, eastern del. Phila	22.76	23.26	24.01	21.76
Malleable, valley	19.00	19.30	20.50	19.00
Malleable, Chicago	21.50	22.00	23.00	21.25
Lake Superior charcoal, Chicago	29.04	29.04	29.04	29.04
Gray forge, val., del., Pittsburgh	20.26	20.86	21.76	20.26
Ferromanganese, del., Pittsburgh	92.79	92.79	119.79	119.79
*1.75 to 2.25 silicon. **2.25 to 2.75 silicon.				
COKE				
Connellsville, furnace, ovens	2.75	3.05	7.45	3.10
Connellsville, foundry, ovens	3.75	4.10	6.50	3.70
SEMIFINISHED MATERIAL				
Sheet bars, open-hearth, Youngstown	36.00	36.00	36.00	36.40
Sheet bars, open-hearth, Pittsburgh	36.00	36.00	36.00	36.25
Billets, open-hearth, Pittsburgh	35.00	35.00	35.00	35.35
Wire rods, Pittsburgh	45.00	45.00	45.00	46.00
FINISHED MATERIAL				
Steel bars, Pittsburgh	1.90	2.00	2.00	2.00
Steel bars, Chicago	2.10	2.10	2.10	2.10
Steel bars, Philadelphia	2.22	2.32	2.32	2.32
Iron bars, Philadelphia	2.22	2.22	2.22	2.22
Iron bars, Chicago, mill	2.00	2.00	2.00	2.10
Beams, Pittsburgh	1.90	1.90	1.90	2.00
Beams, Philadelphia	2.22	2.22	2.17	2.22
Beams, Chicago	2.10	2.10	2.10	2.20
Tank plates, Pittsburgh	1.90	1.90	1.85	2.00
Tank plates, Philadelphia	2.22	2.22	2.12	2.22
Tank plates, Chicago	2.10	2.10	2.10	2.20
Sheets, black, No. 28, Pittsburgh	3.15	3.25	3.35	3.25
Sheets, blue anl., No. 10, Pittsburgh	2.40	2.50	2.50	2.45
Sheets, galvanized, No. 28, Pittsburgh	4.40	4.60	4.60	4.35
Sheets, black, No. 28, Chicago	3.40	3.45	3.50	3.50
Sheets, blue anl. No. 10, Chicago	2.65	2.65	2.65	2.60
Sheets, galvanized, No. 28, Chicago	4.65	4.70	4.75	4.60
Wire nails, Pittsburgh	2.65	2.65	2.65	2.75
Wire nails, Chicago	2.70	2.70	2.70	2.90
Tin plate per base box, Pittsburgh	$5.50	5.50	5.50	5.50
OLD MATERIAL				
Heavy melting steel, Pittsburgh	16.00	16.90	17.60	16.60
Heavy melting steel, eastern Pa.	15.00	15.90	16.35	16.75
Heavy melting steel, Chicago	12.25	13.20	13.75	14.90
No. 1 wrought, eastern Pa.	17.00	17.75	17.75	18.25
No. 1 wrought, Chicago	12.50	14.05	14.40	14.65
Rails for rolling, Chicago	15.25	16.00	16.30	16.75

Composite Market Average

The Fourteen Leading Iron and Steel Products Included are Pig Iron, Billets, Slabs, Sheet Bars, Wire Rods, Steel Bars, Plates, Structural Shapes, Black, Galvanized and Blue Annealed Sheets, Tin Plate, Wire Nails and Black Pipe

This week (May 26, 1926)	$38.00
Last week (May 19, 1926)	38.14
One month ago (April, 1926)	38.48
Three months ago (February, 1926)	38.95
One year ago (May, 1925)	38.37
Ten years ago (May, 1916)	39.78
Thirteen years ago (May, 1918)	27.34

Late News Flashes

Corporation Loses 2 Per Cent

New York, May 25.—Operations of the United States Steel Corp. this week are slightly lower. They represent about 89 per cent of ingot capacity which is down about 2 per cent from a week ago.

Chicago Holds Its Own

Chicago, May 25.—Steel ingot operations are holding at about 88 to 90 per cent. With the Wisconsin Steel Co. and Inland Steel Co. each having one stack out for repairs the active list of steel works stacks here is 28 out of 36.

Pittsburgh Rate Is 85 Per Cent

Pittsburgh, May 25.—With 38 blast furnaces active, the Carnegie Steel Co., as well as independent steel producers in the Duquesne, Clairton, Midland and Woodlawn, Pa., territory continues to average about 85 per cent of steelmaking capacity. The Clinton Iron & Steel Co. is banking its blast furnace.

British Coal Demand Increases

New York, May 25.—The British coal strike is creating a more active demand for coal here. More than 10 cargoes were sold here in the past week for shipment from Hampton Roads to the United Kingdom, at prices higher than $4.75 to $5, a gross ton, f.o.b. piers, Hampton Roads, for Pocahontas and New River pool No. 1. Charter rates paid to United Kingdom are $2.85 to $3, but $3 now is being asked.

Set May 29 for New Freight Rate

Washington, May 25.—Interstate commerce commission today issued an order authorizing freight rates on iron and steel from points in the Pittsburgh district to St. Louis and points in Illinois and Indiana, based on the Jones & Laughlin mileage scale, to become effective May 29. The commission order sets aside former suspensions of these rates with exception of rates from Chicago Heights and Gary to Chicago and rates within the Chicago switching district which remain under suspension until Aug. 23.

New York Plans Super Highway

New York, May 25.—Approximately 50,000 tons of steel is involved in the West street elevated motor roadway now before the board of estimate here. The plan involves a double deck express highway along Hudson river from Canal to Seventy-second street, costing about $24,000,000. A single deck costing $15,000,000 probably will be constructed first and has been approved by the Manhattan borough president. An elevated highway 70 feet wide with widths of 100 feet at ramps of 5 per cent grade are planned.

Current Rolled Steel Prices

PRICES, CENTS PER POUND, UNLESS OTHERWISE STATED

Semifinished Material

Prices per gross ton

BILLETS AND BLOOMS
4 x 4-inch base

Pittsburgh, open-hearth	$35.00
Pittsburgh, bessemer	35.00
Youngstown	35.00
Philadelphia	40.30
Chicago	35.00
Forging, Pittsburgh	40.00
Forging, Philadelphia	44.30 to 45.30

SHEET BARS

Pittsburgh	$36.00
Youngstown	36.00

SLABS

Pittsburgh	$35.00
Youngstown	35.00

WIRE RODS

Pittsburgh	$45.00
Cleveland	45.00
Chicago	46.00

Standard extras, $5 for screw stock; $15 for acid wire rods. Carbon extras, $3 for 0.20 to 0.40; $5 for 0.41 to 0.55; $7.50 for 0.56 to 0.75; $10 over 0.75.

SKELP

Grooved skelp	1.90c
Universal skelp, Pittsburgh	1.90c
Sheared skelp, Pittsburgh	1.90c

Structural Shapes

Pittsburgh	1.90c
Philadelphia	2.12c to 2.32c
New York	2.14c to 2.34c
Chicago	2.10c
Cleveland	2.09c
Birmingham	2.05c to 2.15c

Steel Plates

Pittsburgh	1.85c to 1.90c
Philadelphia	2.22c
New York	2.24c
Chicago	2.10c
Cleveland	2.09c
Birmingham	2.00c to 2.05c

Iron and Steel Bars

Pittsburgh, soft steel	1.90c to 2.00c
Pittsburgh, cold finishing	2.05c to 2.15c
Pittsburgh, forging quality	2.05c to 2.15c
Philadelphia, soft steel	2.22c to 2.32c
New York, soft steel	2.24c to 2.34c
Chicago, soft steel	2.10c
Cleveland, soft steel	2.09c to 2.19c
Birmingham, soft steel	2.05c to 2.15c
San Francisco, soft steel	2.60c
Pittsburgh, refined iron	3.00c to 4.50c
Pittsburgh, reinforcing billet	2.00c
Youngstown, reinf. billet, base	1.90c to 2.00c
Chicago, rail steel	2.00c
Mill rail steel	1.85c to 1.95c
Philadelphia, common iron	2.22c
New York, common iron	2.24c
Chicago, common iron	2.00c

Hoops, Bands, Strips

Hoops, Pittsburgh, 6 inches and under	2.50c
Bands, Pittsburgh, 6 inches and under	2.50c
Bands, Pittsburgh over 6 in.	2.30c
Hot rolled strip steel, Pittsburgh stamping quality	2.30c
Hot rolled strip steel, Chicago	2.50c to 2.60c
Bands, Chicago, under 6 inches	2.60c
Bands, Chicago, 6 in. and over	2.50c
Cold rolled strip steel, hard coils, 1½ inches and wider by 0.100-inch and heavier, base, Pittsburgh	3.75c
Worcester, Mass	4.05c
Chicago	4.20c

Cold Finished Steel

Cold finished steel bars, drawn, or rolled Pittsburgh, Chicago carloads	2.50c
Less carload	2.75c
Steel shafting turned and polished Pittsburgh, Chicago	2.60c

Screw stock base Cleveland $1 higher; and Worcester $3 higher than Pittsburgh and Chicago.

Hot Rolled Alloy Steel

Pittsburgh or Chicago

S. A. E. Series—	
2300 (3½ per cent nickel)	4.40c to 4.50c
3100 (Nickel chromium)	3.40c to 3.50c
6100 (Chrome vanadium)	4.25c to 4.30c
6100 (Chrome vanad. spring)	3.85c
9250 (Silico-mang. spring)	3.25c

Rails, Track Material

Standard bessemer rails, mill	$43.00
Standard open-h'th rails, mill	43.00
Relaying rails, St. Louis	24.00 to 31.00
Relaying rails, Pittsburgh	23.00 to 25.00
Light rails, 25 to 45 mills	34.00 to 36.00
Angle bars, Chicago base	2.75c
Spikes, railroad, Pittsburgh	2.80c
Spikes, small railroad, 7-16-inch and smaller, Pitts	2.90c to 3.00c
Spikes, boat and barge, Pitts.	3.25c
Spikes, railroad, Chicago	2.90c to 3.00c
Track bolts, Pitts. standard	3.90c to 4.15c
Track bolts, Chicago	3.90c to 4.15c
Tie plates, Chicago	2.25c
Tie plates, Pittsburgh	2.25c to 2.35c

Wire Products

To Jobbers in Carloads

F.o.b. Cleveland and Pittsburgh base	
Wire nails	2.65c
Galv'd nails smaller than 1-inch	4.90c
Galv'd nails, 1-inch and over	4.65c
Plain wire	2.50c
Annealed wire	2.65c
Galvanized wire No. 9 gage	3.10c
Barbed wire, painted	3.10c
Barbed wire, galvanized	3.35c
Polished staples	3.10c
Galvanized staples	3.35c

Coated nails, 100 pound kegs, subject to card of extras Feb. 1, 1926 over regular wire nail base.

Woven wire fencing (retailers) 12½ gage, 26-in. high 7-in. bars and 12-in. stays, per 100 rods, f.o.b. Pitts. $20.03

Joliet, DeKalb and Waukegan, Ill., and Anderson, Ind., prices $1 per ton over Cleveland-Pittsburgh base on products made there; Chicago $1 higher; Duluth $2 higher and Worcester, Mass., and Fairfield, Ala., $3 higher.

Sheets

SHEET MILL BLACK

No. 28, Pittsburgh, base	3.15c to 3.25c
No. 28, Philadelphia, delivered	3.42c to 3.57c
No. 28, Gary, Indiana Harbor	3.35c to 3.45c
No. 28, Chicago, delivered	3.40c to 3.50c

TIN MILL, BLACK

No. 28, Pittsburgh	3.15c to 3.25c
No. 28, Gary base	3.45c

GALVANIZED

No. 28, Pittsburgh, base	4.40c to 4.50c
No. 28, Philadelphia, delivered	4.72c
No. 28, Gary, Indiana Harbor	4.50c to 4.60c
No. 28, Chicago, delivered	4.65c to 4.70c

BLUE ANNEALED

No. 10, Pittsburgh, base	2.40c to 2.50c
No. 10, Philadelphia, delivered	2.72c
No. 10, Gary, Indiana Harbor	2.60c
No. 10, Chicago, delivered	2.65c

AUTOMOBILE SHEETS

No. 22, Pittsburgh, base	4.30c

Tin and Terne Plate

Prices per 100-pound box, Pittsburgh

*Tin plate, coke base	$5.50

Gary, Ind., base 10 cents higher.

Long ternes, base	4.85

*This price is subject to quantity differentials established by individual regulations.

Iron and Steel Pipe

Base Discounts Pittsburgh and Lorain, O.
to Jobbers in Carloads

	Black	Galv.
1 to 3-inch butt steel	62	50½
1 to 1½-inch, butt iron	30	13

Indiana Harbor, Ind., and Evanston, Ill., 2 points less and $4 per ton higher. Chicago delivered 2½ points less and $5 per ton higher.

Boiler Tubes

Less Carload Discounts—Carloads 4 Points Additional—F.o.b. Pittsburgh Mills

Steel 3¼ to 3¾-inch	68½
Charcoal iron, 3¼ to 4½-inch	5
Seamless hot rolled, 3¼ to 3½-inch	46 off

Additional discounts of several 5 per cents being allowed.

Chain, Piling, Cut Nails

Chain, 1-in. proof coil, Pitts.	6.00c
Sheet piling base, Pittsburgh	2.25c to 2.30c
Cut nails, c. l., f.o.b. mills	2.80c

Cast Iron Water Pipe

Prices per net ton
Class B Pipe

Four-inch, Chicago	$53.20
Six-inch to 24-inch, Chicago	49.20
Over 24-inch, Chicago	46.20
Four-inch, Birmingham	44.00 to 45.00
Six-inch and over, Birmingham	40.00 to 41.00
Four-inch, New York	56.50 to 57.60
Six-inch and over, New York	51.50 to 52.60

Standard fittings, Birmingham base $110.00, 6 to 24-inch, base; over 24-inch, plus $20; 4-inch, plus $20; 3-inch, plus $20; gas pipe fittings, $5 higher.

Class A pipe is $5 higher than Class B

Nuts and Bolts

F.o.b. basing points, Pittsburgh, Cleveland, Birmingham and Chicago.

Hot pressed square tapped or blank	$4.00 off list
Hot pressed hexagon tapped or blank	$4.40 off list
Cold punched square or hexagon blank	$4.10 off list
Cold punched square or hexagon tapped or blank	$4.10 off list
Cold punched U. S. S. semifinished hexagon nuts ⅝-inch and larger	75, 10 and 5 off
Cold punched U. S. S. semifinished hexagon nuts 9/16-inch and smaller	80, 10 and 5 off
Cold finished S. A. E. semifinished ⅝-inch and larger	75, 10, 10 and 5 off
Cold finished S. A. E. semifinished 9/16-inch and smaller	80, 10, 10 and 5 off

CARRIAGE BOLTS
(⅝ x 6-inch, smaller and shorter)

Rolled thread	50, 10 and 10 off
Cut thread (all sizes)	50 and 10 off
Eagle carriage bolts (Eagle list)	65 and 10 off

MACHINE BOLTS
(⅝ x 4-inch, hot pressed nuts)

Rolled thread	60 and 10 off
Cut thread (all sizes)	50, 10 and 10 off

(All sizes cold punched nuts)

Cut thread	45, 10 and 5 off
Lag screws	60, 10 and 10 off
Plow bolts Nos. 3 and 7 heads	50 and 10 off
All other standard heads	50 and 10 off plus 20 per cent
Tap bolts	30 off
Bolt ends with hot pressed nuts	50, 10 and 10 off
Bolt ends with cold punched nuts	45, 10 and 5 off
Blank bolts	50, 10 and 10 off
Rough stud bolts with nuts (250 pieces or more of a size)	40 and 10 off
Stove bolts, 80, 10 and 5 off plus 2½ in bulk.	
Tire bolts	60 and 5 off

SEMIFINISHED CASTELLATED AND SLOTTED NUTS

Per 1000, f.o.b. producer's plant, freight allowed

	S.A.E. Castellated	U.S.S. Slotted
¼	$ 4.40	$ 4.40
5/16	5.15	5.15
⅜	6.20	6.60
7/16	7.90	9.00
½	10.10	10.50
9/16	13.80	14.20
⅝	17.00	17.30
¾	28.50	24.00
⅞	36.00	36.00
1	55.50	58.00
1⅛	89.00	89.00
1¼	126.00	131.00
1⅜	183.50	183.50
1½	210.00	210.00

Larger sizes—Prices on application

HEXAGON CAP SCREWS

Milled	80 and 10 off
Upset	80, 10 and 10 off

SQUARE HEAD SET SCREWS

Milled	80 and 5 off
Upset	80, 10 and 5 off

Rivets

Structural rivets, carloads, Pittsburgh and Cleveland	2.50c to 2.60c
Structural rivets, carloads, Chicago	70 and 10 off
**Rivets, 7/16-inch and smaller, Pittsburgh Cleveland	70 and 10 to 70 and 5 off
**Rivets, 7/16-inch and smaller Chicago	70 and 10 off

**Some makers quoting 70 off with freight allowed on 300 pounds or more.

Washers

Wrought c.l., Chicago dist.	$6.30 to 6.40 off
Wrought c.l., Pitts dist	6.50 to 6.55 off
Lock washers, f.o.b. factory	$5 off

Pig Iron

Sales at Lowest Point in Weeks—Buffalo and Eastern Pennsylvania Iron Marked Down—Valley Market Weaker

MORE seams appeared in the pig iron price structure during the past week which also probably marked a new low point in sales during the present movement. Stagnant conditions are reported in practically all districts; furnace interests with headquarters at Cleveland booked the largest aggregate, 15,000 tons. Their sales for the month up to Tuesday totaled 102,000 tons, not including long-term contracts, and represented about two-thirds of normal output of stacks in blast. Buffalo makers have dropped from $21 to $20 in the eastern market; eastern Pennsylvania iron is off 50 cents to $21.50 to $22. Valley furnaces are offering iron freely at $18.50 in competitive territory, and are reported absorbing freight in some instances.

PITTSBURGH, May 25.—The pig iron market is dull since a nearby sheet interest bought 1000 tons of basic at $18, valley, as noted last week. A few sales of 100 to 350 tons of bessemer were made in the last few days by a merchant furnace interest maintaining $19.50, valley. Foundry iron coming into Pittsburgh territory from the valley still is selling in small lots at $18.50, valley for No. 2 plain, although makers there are equalizing freight into competitive districts which brings their quotations down to about $18, base, valley. Malleable also is quoted at $18.50, valley. No new inquiries are appearing for steelmaking grades, and inquiries for future supplies of foundry and malleable irons are not coming out. The Clinton Iron & Steel Co. blew out its furnace here May 20.

Boston, May 25.—Third quarter pig iron contracts are slow to develop. Several small sales for that delivery were made during the past week. Inquiry at present covers two 500-ton lots for third quarter. Prices are a little easier. Eastern Pennsylvania furnaces have dropped from $22 to $21.50, base, and Buffalo furnaces while nominally at $21.00, base, are understood to have quoted $20.50 base on round tonnages. The continental iron situation is unchanged. Buying at Boston is quiet.

Buffalo, May 25.—Pig iron inquiry is estimated at 3000 to 5000 tons in small lots. One Buffalo district consumer is understood to have purchased 1000 tons from a furnace interest west of here. It appears the producer shaded $19 to get the business. Buffalo furnaces claim to be declining all business below $21, base, for low silicon foundry and malleable. Shipments on old orders indicate consumption is fairly heavy.

Philadelphia, May 25.—Pig iron sales generally are restricted to small lots for prompt or early shipment. The total is only fair. Foundry iron now is $21.50 to $22, base eastern Pennsylvania furnace, or $22.26 to $22.76, delivered, Philadelphia. Following recent sales of about 15,000 tons of basic no further activity in this grade is noted. Basic is quoted at $21.75 to $22.25, delivered, eastern Pennsylvania. Small tonnages of low phosphorus iron have been sold at unchanged prices.

Chicago, May 25.—Considering that the third quarter is only five weeks distant, sales of northern iron for that delivery are unusually light. A few foundries have protected themselves on castings contracts but the aggregate is not large and most melters are buying iron only through this quarter. Supplies are easy and with the eastern markets soft melters entertain no apprehension concerning prices. Some sellers are not absorbing the freight necessary to compete in western Michigan. This market, incidentally, is less attractive as demand from the automobile interests slackens. Malleable shops in Illinois and Wisconsin on railroad work are operating better than those with automobile contracts. An important seller here reports good spot business and expects its May shipments to equal those of April. Malleable and No. 2 foundry are quoted at $21.50, Chicago furnace. Seven merchant stacks are active and the eighth, Thomas at Milwaukee, is now scheduled to go in early in June. An inquiry from Milwaukee for 1000 tons of low phosphorus, quoted at $30.50 to $31, delivered, is still open. A sale of 200 tons of silveries to one melter, in addition to several carload sales, has been closed. A small lot of southern iron has been taken on the basis of $22, Birmingham, or $28.01, delivered.

Pig Iron Prices

Prices per gross ton

Bessemer, valley	$19.00 to 19.50
Bessemer, Pittsburgh	20.76 to 21.26
Basic, valley	18.00
Basic, Pittsburgh	19.76
Basic, Buffalo	19.50 to 20.50
Basic, del., eastern Pa.	21.75 to 22.25
Malleable, valley	19.00
Malleable, Pittsburgh	20.76
Malleable, del., Cleveland	20.00
Malleable, Chicago	21.50
Malleable, Buffalo	20.00 to 21.00
Malleable, del., eastern Pa.	22.75 to 23.25
No. IX, eastern del., Phila.	23.26 to 23.76
No. 1X, Buffalo	22.50
No. 1 foundry, Chicago	22.00
No. 2 foundry, valley	19.00
No. 2 foundry, Pittsburgh	20.76
No. 2 foundry, Buffalo	20.00 to 21.00
No. 2 foundry, Chicago	21.50
No. 2 foundry, Granite City	22.00 to 22.50
No. 2 foundry, Ironton furnace	19.50
No. 2 foundry, del., Cleveland	20.00
No. 2 foundry, del., Phila.	22.26 to 22.76
No. 2 foundry, N. J., tidewater	22.89 to 23.39
No. 2X, eastern del., Phila.	22.76 to 23.26
No. 2X, east. N. J., tidewater	23.39 to 23.89
No. 2X, foundry, Buffalo furnace	20.50 to 21.50
No. 2X, eastern del., Boston	25.65 to 26.65
No. 2X, Buffalo, del., Boston	24.91 to 25.91
Continental foundry f.o.b. Boston	20.00 to 21.00
India, 2.25 to 2.75 silicon, delivered cars, Boston	20.50 to 21.50
No. 2 Alabama, Birmingham	22.00
No. 2 Alabama, Cincinnati	25.69
No. 2 Tenn., Birmingham	20.50
No. 2 Tenn., Cincinnati	23.69
No. 2 southern, Philadelphia	27.01 to 28.01
No. 2 southern, Chicago	28.01
No. 2 southern, Chicago (barge and rail)	26.18
No. 2 southern, Boston (rail and water)	27.91 to 28.91
No. 2 southern, Cleveland	27.01 to 28.01
No. 2 Southern, St. Louis	25.42 to 26.42
No. 2X, Virginia, furnace	23.00 to 23.25
No. 2X, Virginia, Phila.	28.17 to 28.42
No. 2X, Virginia, Jersey City	28.54 to 28.79
No. 2X, Virginia, Boston	28.92 to 29.17
Gray forge, eastern Pa.	21.75 to 22.25
Gray forge, val. del. Pitts.	20.26
Low phos., standard, valley	27.50 to 28.50
Low phos., standard, Phila.	24.76 to 27.79
Low phos., Lebanon, furnace	23.00 to 24.00
*Low phos., English (nominal)	24.26 to 24.76
Charcoal, Birmingham	30.00
Charcoal, Superior, Chicago	29.04

Silvery iron Jackson county, Ohio furnace, 5 per cent $24.50; 6 per cent $25.50; 7 per cent $26.50; 8 per cent $27.50; 9 per cent $29.00; 10 per cent $31.00; 11 per cent $33.00; 12 per cent $35.00; 13 per cent $37.00; and 14 per cent $39.00.

Bessemer ferrosilicon, Jackson county, Ohio, furnace, 10 per cent $33.00; 11 per cent $35.00; 12 per cent $37.00; 13 per cent $39.00; 14 per cent $41.00; 15 per cent $44.00; 16 per cent $46.00; 17 per cent $48.50.

*Duty paid, delivered Philadelphia consumers.

The McKinney Steel Co. may relight its Genesee blast furnace, Charlotte, N. Y., later in the summer, if market conditions are favorable. Reports from Rochester say the company has accumulated 65,000 tons of

Cleveland, May 25.—While pig iron sales recently have been restricted to small and moderate size lots, mainly for early shipment, the total amount booked by four furnace interests with headquarters here, since May 1, is 102,000 tons. Most of this tonnage is for consumers outside this district, and was distributed among three sellers. Recent activity on the part of one Cleveland furnace interest in outside territory is reflected in the large total. Business in the past week was not as good as in the week preceding, the aggregate of sales having dropped to 15,000 tons. A few carloads were sold in Cleveland. The market here is not tested, and while $19.50, base, furnace is quoted, it is believed a sizable order would develop a better price. It is persistently reported that a Cleveland furnace has offered foundry iron at $18, base, Cleveland, in outside territory, although so far as definitely known $18.25 has been the lowest that has been applied. Lake furnaces west of here have not dipped below $19.50, they claim, although rumors of $19, base, furnace, in competitive territory, are heard. The valley market continues quotable at $18.50 to $19, base, furnace.

ore and 40,000 tons of limestone at the furnace. The furnace has been idle several years.

Cincinnati, May 25.—Bookings by pig iron producers and sellers here in the past week were the smallest in volume in several months. As a result of the light demand, northern iron is quoted $19.50, Ironton, as against $19.50 to $20 a week ago. Sales aggregated 2000 tons involving malleable and northern foundry almost exclusively. The M. Hertenstein Co., Columbus, O., bought 400 tons of malleable from the American Rolling Mill Co., while a melter at Springfield, O., took 200 tons of malleable and a like tonnage of foundry. The largest inquiry pending involves 500 to 1000 tons of northern foundry for a user in Kalamazoo, Mich. Southern iron ranges from $21 to $22, Birmingham, with only a limited tonnage of the Tennessee grade available. The silvery market shows little change, although the Globe Iron Co. is asking $27.50 for the 8 per cent grade for shipment over the balance of the year. The Jackson County Iron & Steel Co. wants $1 a ton more for the same grade for last quarter.

St. Louis, May 25.—Demand for pig iron is quieter than at any time in many months. Sales reported during the week totaled under 1000 tons, and virtually no inquiry has appeared. The melt continues to decrease, and there are a growing number of requests to hold back shipments. Jobbing foundries report a falling off in orders, most of the plants are active only three to four days per week. There is a disposition to shade pig iron prices under current quotations, and producers in the several districts serving this market meet competition.

Birmingham, Ala., May 24.—Orders for pig iron equal the make and greater confidence is felt in the market. Quotations are being maintained at $22 base furnace. A little iron is being taken from furnace stocks. The Sloss-Sheffield Steel & Iron Co. will reline and repair another furnace when the work on No. 4 at North Birmingham is completed.

New York, May 25.—Pig iron sales in this territory in the past week probably did not exceed 2000 tons. The market was the dullest in a long time. New inquiries aggregate about 30000 tons. Prices are sagging. The Buffalo market has dropped off $1 and now is $20, base Buffalo. Eastern Pennsylvania iron is easier, now $21.50 to $22, base furnace.

Ferroalloys

Price of $88 Still Available on Ferromanganese—Market Quiet

Pittsburgh, May 25.—Ferroalloys continue inactive. At least one seller of ferromanganese is willing to take business at $88, and the $95 quotation maintained by one domestic maker, and the $110 price on material imported from England are nominal. There is practically no spot demand. In some directions signs of slowing up of operations are noted, and this has curtailed consumption of ferroalloys accordingly, although ferrosilicon, ferrophosphorus, etc., all moving out with a fair degree of regularity on contracts, and market prices are unchanged. One inquiry just closed involves 150 tons of 11 per cent for shipment out of the district. From time to time single carloads of 10 to 12 per cent are taken. Prices on blast furnace material are well held. Further spiegeleisen purchases against last half needs are noted at full market levels.

New York, May 25.—Activity in ferromanganese is still restricted to sales of a number of spot carloads which brought $88 and $95, duty paid tidewater. Several hundred tons of spot spiegeleisen was sold at $34, furnace, for 20 per cent. Consumers are putting out some feelers for third quarter and last half contracts. Special ferroalloys are unchanged. Tungsten ore continues weak, about $10.50 to $11, with few sales.

Ferroalloy Prices

†Ferromanganese 78 to 82 per cent, tidewater, or furnace first hand and resales	$88.00 to 110.00
Ferromanganese delivered Pittsburgh	92.79 to 114.79
Spiegeleisen 19 to 21 per cent domestic furnace or tidewater	32.00 to 34.00
Ferrosilicon, 50 per cent contract freight allowed	85.00
Ferrotungsten standard, per pound contained	1.08 to 1.12
Ferrochrome, 60 to 70 chromium, 6 to 8 carbon, cents per pound contained, delivered	11.00 to 11.50
Ferrovanadium, 30 to 40 per cent per pound estimated, according to analysis	3.25 to 4.00
Ferro-carbon-titanium, car lots, producer's plant, net ton	200.00
Ferrophosphorus, electrolytic, per ton, carload, 17 to 19 per cent, Rockdale, Tenn., basis (18 per cent material)	91.00
Ferrophosphorus, electrolytic, per ton, carload, 23 to 25 per cent, f.o.b. Anniston, Ala., (24 per cent materials)	122.50

†Duty paid.

Coke

Reduced Production Strengthening Furnace Fuel Market—Standard Foundry Is Easier

WHILE prices of beehive coke have not changed during the past week, a stronger tone is due to reduced production. Distress lots at $2.75 are scarce, and $2.85 to $3 represents the spot furnace fuel market. Producers are quoting $3.25 on inquiries for third and fourth quarter. The foundry market is easier, some standard coke having been sold below $3.75.

Pittsburgh, May 25.—Margins between beehive coke production and contract obligations are much narrower, hence only a limited amount of coke is available for the spot market. Distress tonnages are scarce. Coke on wheels is well cleaned up and only occasionally a carload appears at $2.75 on the spot market. Spot production coke is selling at $2.85 and some makers quote $3. A steel interest in the Buffalo district bought 10 carloads at $2.85. A valley merchant furnace interest occasionally buys filling-in lots of five carloads at a time at the same price. Two or three inquiries for third and fourth quarters still are pending. Producers are quoting $3.25 that far ahead. Heating coke is selling at $2 to $2.50. The minimum figure, however, is paid by brokers who are selling at $2.25. Some foundry coke is available below $3.75. Middle interests are paying $3.65 and selling at $3.75. Some producers are obtaining $4 and $4.25 in the spot market. Premium coke still is selling at $5.50.

Production of coke in the Connellsville region for the week ended May 15 was 154,870 tons, compared with 160,340 tons in the preceding week, according to the *Connellsville Courier*.

New York, May 25.—It is estimated about 75 per cent of the foundry trade now has renewed coke contracts for second half, paying $5.25 to $5.50, Connellsville, for beehive fuel and prices at time of shipment for by-product coke. Some consumers spot coke demand is only fair.

Coke Prices

Beehive, Ovens

Prices per net ton

Connellsville furnace	$2.75 to 3.00
Connellsville foundry	3.75 to 4.00
New River foundry	6.50 to 7.00
New River furnace	4.25 to 4.75
Wise county furnace	3.25 to 3.50
Wise county foundry	4.25 to 5.50
Alabama foundry	5.00 to 5.50
Alabama furnace	5.00 to 5.25

By-Product

Foundry, Newark, N. J.; del	$ 9.59 to 10.75
Foundry, Chicago, ovens	9.75
Foundry, New England, del	12.50
Foundry, St. Louis	10.00
Foundry, Granite City, Ill	10.00
Foundry, Birmingham	5.00 to 5.50
Foundry, Indianapolis, del	10.75

Dismantling Ella Stack

Dismantling the Ella blast furnace at West Middlesex, Pa. of the Reliance Coke & Furnace Co., Pittsburgh, has been commenced. The stack has been abandoned since 1925. It was built originally by Pickands, Mather & Co. in 1882, then being 70 by 14½ feet, with 5 Wheeler-type pipe hot blast stoves. It was remodeled in 1892, again in 1899 and last remodeled in 1909 to 80 by 16 feet. Its annual capacity in bessemer and basic pig iron was 80,000 tons. The material in the stack will be scrapped and the buildings razed.

Plates

Tank Tonnage Placed at Chicago Features Market—10,000 Tons Closed for Lake Boats

OUTSIDE of the Chicago market plate demand has not been very heavy during the past week. Two Chicago makers took a total of 20,000 tons. Most of this was for tanks, including 4500 tons for the Union Oil Co. Cleveland reports 10,000 tons placed for two lake vessels. For a gas holder at Detroit 4500 tons is wanted and for a water line in New York 4000 tons.

PLATE PRICES, PAGE 1388

Philadelphia, May 25.—Eastern plate mill operations vary from 50 to 75 per cent. New business has fallen somewhat behind shipments. Demand is limited to spot and nearby requirements. The price continues firm at 1.90c, Pittsburgh.

Boston, May 25.—Plates are firm, and sales though small continue to show a fair total. Inquiry is in good volume. The price is 1.90c, Pittsburgh, or 2.265c delivered.

Pittsburgh, May 25.—Apparently large platemakers are endeavoring to maintain 1.90c on tank plates in this territory. It is only the buyer with an old quotation or a protection on a large tonnage who is able to obtain a lower figure. On one lot of 1000 tons wanted by a nearby tank fabricator within the past few days, 1.90c was quoted by all Pittsburgh producers. An order of this size is unusual at this time. Some plate mill operations are being cut down; the Youngstown Sheet & Tube Co. is operating only one plate mill.

Cincinnati, May 25.—The Louisville & Nashville railroad has purchased 1000 tons of plates from the Tennessee Coal, Iron & Railroad Co., for prompt shipment.

Chicago, May 25.—Oil storage tankage continues to be the mainstay of the plate market. Between 18,000 and 20,000 tons, chiefly for the southwestern fields, has been placed with tank interests taking their plates from Chicago district mills. This includes 4000 tons of the Union Oil Co. inquiry which went to an important tank interest here. A gas holder at Detroit, requiring 4500 tons of plates, has been placed with Bartlett, Hayward & Co. Western carriers are taking a small amount of plates for repair work, the principal project being the rehabilitation of 500 stock and 500 box cars by the Chicago & North Western in its own shops. Both specifications for and sales of plates in the past week have been the best since the beginning of April. Plates are quoted at 2.10c, Chicago, but certain tonnage business and competitive conditions at distant points bring out a more favorable price.

Cleveland, May 25.—Of 10,000 tons, mostly plates, required for two lake ore freighters just awarded to the American Shipbuilding Co. by the Interlake Steamship Co., the Youngstown Sheet & Tube Co. will furnish 4000 tons and the Bethlehem Steel Co. 6000 tons. The Youngstown Sheet & Tube Co. also will furnish a considerable tonnage of pipe and conduits for the new vessels. While there is still talk that an attractive order might shade 1.90c, Pittsburgh or 2.09c, Cleveland, the fact is that the mills still seem to be standing firmly by the former figure. On some round tonnages up for action this week, 1.90c was uniformly quoted. Incoming business chiefly consists of small lots and shows no material change from recent volume. The leading inquiry is 4000 tons for a water line being bid upon for New York. A local jobber is inquiring for 150 to 200 tons.

CONTRACTS PLACED

800 tons, miscellaneous plate business including two stand pipes for the Proctor & Gamble Co., Port Ivory, N. Y.; three 10,000-barrel tanks for Texas; a municipal tank at Munhall, Pa.; one 55,000-barrel tank for Great Falls, Montana, to the Pittsburgh-Des Moines Steel Co.

1500 tons, 14 stand pipes for Cincinnati, to the Petroleum Iron Works.

4500 tons, gasholder at Detroit, to Bartlett, Hayward Co.

4340 tons, Union Oil Co., Los Angeles, fourteen 80,000-barrel tanks, as follows: 6 tanks, 1860 tons, to Western Pipe & Steel Co.; 5 tanks, 1550 tons to Chicago Bridge & Iron Works; 3 tanks, 930 tons, to Lacy Mfg Co.

1400 tons, water tower, Cincinnati, O., to Riter-Conley Co.

600 tons, Associated Oil Co., Los Angeles, two barges divided between the Bethlehem Shipbuilding Co. and the Los Angeles Ship Building Co.

CONTRACTS PENDING

4000 tons, 13,000 feet of 16-inch water line for Brooklyn, N. Y., bids open June 1.

300 tons, Grass Valley, Calif., Nevada County Irrigation district, pipe line; pending.

260 tons, roaster and treated, American Smelting & Refining Co.; bids being taken.

750 tons, sheet piling, United States engineers, Pittsburgh, for dam No. 5, Allegheny river, Schenley, Pa.; bids close June 21.

Represents English Firm

On page 1357 of the May 20 issue, Parson & Croslandt, Ltd. were referred to as the successors of William Jacks & Co., Ltd. of London, Eng. This was in error, because as previously pointed out in IRON TRADE REVIEW, the goodwill and name of William Jacks & Co., Ltd. was purchased by William Jacks & Co., Winchester House, Old Broad street, London. E. Aurthur Tutein, Inc., 52 Vanderbilt avenue, New York, which represented the original Jacks company in the United States, now represents its successor, William Jacks & Co.

The will of Godfrey Stengel, founder of the Pittsburgh Tool Steel Wire Co., Monaca, Pa., filed May 22 provides that there shall be paid to the family or dependents of each employe a month's salary at the time of the employe's death.

Semifinished

Market Is Quiet, and Prices Are Untested—Billet Specifications Slower

QUIET conditions in the sheet market are reflected in lack of specifications for sheet bars. Releases from strip steel makers and other users of rerolling billets also have declined. Consumers are covered for this quarter and little open market business is noted. Sheet bars continue quotable at $36 and billets and slabs $35.

SEMIFINISHED STEEL PRICES, PAGE 1388

Youngstown, O., May 25.—Conditions in the semifinished market are unchanged. New business is entirely lacking. The volume of tonnage involved in sheet bar specifications indicates conservative buying. Quotations are unchanged and firm. Prices in effect include $36, Youngstown, on small billets and sheet bars, and, $35, Youngstown on standard slabs and billets.

Pittsburgh, May 25.—Slackening of specifications in semifinished steel has spread to strip steel makers and other users of rerolling billets. Forging billet users continue to specify against their $40 contracts and so far prices have shown no tendency to display the recent weakness in the pig iron market prices, so that 4 x 4-inch rerolling billets continue quotable at $35 and sheet bars at $36. A few small wire rod orders are occasionally noted, coming from various users at the $45 figure generally quoted. Skelp is quoted at 1.90c but is entirely inactive in the current market.

Cleveland, May 25.—Demand for sheet bars has slowed up, but specifications for billets and slabs are fair. The leading merchant interest here has sufficient for two weeks operations at its present rate of 75 per cent. Small sales of standard billets and slabs are noted at $35, Youngstown. Sheet bars continue quotable at $36.

Iron and Steel Scrap Prices

Corrected to Tuesday noon. Gross Tons Delivered to Consumer

Steel Works Scrap

HEAVY MELTING STEEL

Birmingham	13.00 to 14.00
Boston (dealers)	10.00 to 10.50
Buffalo, No. 1	15.75 to 16.00
Chicago	12.25
Cincinnati (dealers)	11.00 to 11.50
Cleveland, No. 1	13.50 to 14.00
Cleveland, No. 2	12.50 to 13.00
Detroit	12.00 to 12.50
Eastern Pennsylvania	15.00
Bethlehem delivery	14.50
New York (dealers)	9.75 to 10.25
Pittsburgh	15.50 to 16.00
St. Louis	12.00 to 12.50
Valleys, No. 1	16.00 to 16.25

COMPRESSED SHEETS

Buffalo	14.25 to 14.75
Chicago	10.25 to 10.75
Cleveland	13.00 to 13.50
Detroit	10.25 to 10.75
Pittsburgh	14.50 to 15.00
Valleys	14.50 to 15.00

BUNDLED SHEETS

Buffalo	10.50 to 11.00
Cincinnati (dealers)	7.00 to 7.50
Cleveland	11.00 to 11.50
Eastern Pennsylvania	13.00 to 13.50
Pittsburgh	13.50 to 14.00
St. Louis	7.50 to 8.00

SHEET CLIPPINGS, LOOSE

Chicago	7.75 to 8.25
Cincinnati	6.50 to 7.00
Detroit	6.50 to 7.00

STEEL RAILS, SHORT

Birmingham	14.00 to 15.00
Buffalo	16.00 to 16.50
Chicago	16.00 to 16.50
Cincinnati (dealers)	16.00 to 16.50
Cleveland (over 6 ft.)	14.50 to 15.00
Detroit	15.00 to 15.50
St. Louis	16.00 to 16.50

STOVE PLATE

Birmingham	14.00 to 14.50
Boston (consumers)	13.00 to 13.50
Buffalo	14.25 to 14.50
Chicago	14.75 to 15.25
Cincinnati (dealers) (net)	7.50 to 8.00
Cleveland	13.00 to 13.50
Detroit (net tons)	12.50 to 13.00
Eastern Pennsylvania	13.00 to 13.50
New York (dealers)	9.50 to 10.75
Pittsburgh	12.50 to 13.00
St. Louis	14.00 to 14.50

LOW PHOSPHORUS*

Buffalo, billet and bloom crops	17.00 to 17.50
Cincinnati (dealers)	15.50 to 16.00
Eastern Pennsylvania	19.00 to 20.00
Pitts. billet and bloom crops	19.50 to 20.00
Cleveland, billet and bloom crops	18.00 to 18.50

SHOVELING STEEL

Chicago	12.00 to 12.25
Pittsburgh	11.50 to 12.00
St. Louis	12.00 to 12.50

KNUCKLES, COUPLERS, SPRINGS

Chicago	14.75 to 15.25
Eastern Pennsylvania	17.50 to 18.00
Pittsburgh	17.50 to 18.00
St. Louis	14.00 to 14.50

FROGS, SWITCHES, GUARDS

Chicago	13.50 to 14.00
Eastern Pennsylvania	16.00 to 16.50
St. Louis	13.50 to 14.00

ANGLE BARS—STEEL

Buffalo	16.50 to 17.00
Chicago	14.00 to 14.50
St. Louis	13.50 to 14.00

Iron Mill Scrap

RAILROAD WROUGHT

Birmingham	$12.00 to 13.00
Boston (dealers)	13.00 to 13.50
Buffalo, No. 1	13.50 to 14.00
Buffalo, No. 2	15.00 to 15.50
Chicago, No. 1	12.25 to 12.75
Chicago, No. 2	12.00 to 12.25
Cincinnati, No. 1 (dealers)	8.00 to 8.50
Cleveland, No. 1	11.50 to 12.00
Eastern Pennsylvania	16.50 to 17.50
New York, No. 1 (dealers)	14.50 to 15.00
Pittsburgh, No. 1	12.00 to 12.50
Pittsburgh, No. 2	15.50 to 16.00
St. Louis, No. 1	12.00 to 12.50
St. Louis, No. 2	12.00 to 12.50

*Light plate scrap $1.50 less.

WROUGHT PIPE

Boston (dealers)	9.50 to 10.00
Eastern Pennsylvania	15.00
Buffalo	15.00 to 15.50
New York (dealers)	10.75 to 11.25

YARD WROUGHT

Boston	12.00 to 12.50
Eastern Pennsylvania	16.00

BUSHELING

Buffalo	14.25 to 14.75
Chicago, No. 1	10.75 to 11.25
Chicago, No. 2	8.25 to 8.75
Cincinnati, No. 1 (dealers)	8.00 to 8.50
Cleveland, No. 1	11.50 to 12.00
Cleveland, No. 2	11.00 to 11.25
Pittsburgh, No. 1	13.50 to 14.00
St. Louis, No. 1	10.50 to 11.00

MACHINE SHOP TURNINGS

Birmingham	8.00 to 8.50
Boston (chemical)	8.00 to 8.50
Buffalo	10.00 to 10.50
Chicago	7.75 to 8.25
Cincinnati (dealers)	6.50 to 7.00
Cleveland	10.50 to 10.75
Detroit	7.00 to 7.50
Eastern Pennsylvania	13.00 to 13.50
New York (dealers)	9.25 to 9.75
Pittsburgh	11.00 to 11.50
St. Louis	7.00 to 7.50

CAST IRON BORINGS

Birmingham (chemical)	15.50 to 16.50
Birmingham (plain)	8.00 to 8.50
Boston (chemical)	10.50 to 10.75
Boston (dealers)	8.00 to 8.50
Buffalo	11.75 to 12.25
Chicago	9.50 to 10.00
Cincinnati (dealers)	7.00 to 7.50
Cleveland	11.00 to 11.50
Detroit	8.00 to 8.50
Eastern Pennsylvania	13.50
Eastern Pennsylvania (chem.)	15.50 to 16.00
New York (dealers)	8.75 to 9.75
Pittsburgh	11.50 to 12.00
St. Louis	9.50 to 10.00
Valleys	12.50 to 13.00

MIXED BORINGS AND TURNINGS
For blast furnace use

Boston (dealers)	8.00 to 8.50
Buffalo	11.75 to 12.25
Cincinnati (dealers)	6.50 to 7.00
Cleveland	11.25 to 11.50
Detroit	8.00 to 8.50
Eastern Pennsylvania	12.50 to 13.00
New York (dealers)	9.25 to 9.75
Pittsburgh	11.50 to 12.00

PIPES AND FLUES

Chicago	9.75 to 10.25
Cincinnati (dealers)	7.00 to 7.50
St. Louis	8.00 to 8.50

RAILROAD GRATE BARS

Buffalo	13.50 to 14.00
Chicago	13.75 to 14.25
Cleveland	13.50 to 13.75
Eastern Pennsylvania	13.50
New York (dealers)	11.00 to 11.50
St. Louis	13.00 to 13.50

FORGE FLASHINGS

Boston (dealers)	8.75 to 9.00
Buffalo	12.00 to 12.50
Chicago	9.00 to 9.50
Cleveland (under 10 in.)	11.50 to 12.00
Cleveland (over 10 in.)	11.50 to 12.00
Detroit	8.25 to 8.75
Pittsburgh	12.00 to 12.50

FORGE SCRAP

Boston (dealers)	8.50 to 9.00
Chicago	16.25 to 16.75
Eastern Pennsylvania	13.50

ARCH BARS AND TRANSOMS

Chicago	21.25 to 21.75
St. Louis	20.50 to 21.00

Iron Steel Works Scrap

AXLE TURNINGS

Boston (dealers)	8.50 to 9.00
Buffalo	13.50 to 14.00
Chicago	12.50 to 13.00
Cleveland	12.50 to 13.00
Eastern Pennsylvania	13.50
Pittsburgh	14.00 to 14.50
St. Louis	8.50 to 9.00

STEEL CAR AXLES

Birmingham	18.00 to 19.00
Boston (shipping point)	15.50 to 16.50
Buffalo	16.50 to 17.00
Chicago	19.00 to 19.50
Cleveland	16.00 to 16.50
Eastern Pennsylvania	22.00 to 23.00
Pittsburgh	20.00 to 20.50
St. Louis	19.50 to 20.00

SHAFTING

Boston (shipping point)	15.50 to 16.50
Chicago	19.25 to 19.75
Eastern Pennsylvania	20.50 to 21.00
New York (dealers)	17.50 to 18.00
St. Louis	16.00 to 16.50

Iron Foundry Scrap

CAR WHEELS

Birmingham, iron	$16.00 to 16.50
Boston (consumers)	17.00 to 17.50
Buffalo, iron	15.50 to 16.00
Buffalo, steel	16.50 to 17.00
Chicago, iron	15.25 to 15.75
Chicago, steel	15.75 to 16.25
Cincinnati	11.00 to 11.50
Eastern Pennsylvania	16.50 to 17.00
New York iron (dealers)	14.50 to 15.00
Pittsburgh, iron	16.50 to 17.00
Pittsburgh, steel	17.50 to 18.00
St. Louis, iron	15.50 to 16.00
St. Louis, steel	16.50 to 17.00

NO. 1 CAST SCRAP

Birmingham, cupola	17.00 to 18.00
Boston	18.00 to 18.50
Buffalo	14.75 to 15.25
Chicago, No. 1 machinery	18.00 to 18.50
Chicago No. 1 railroad or agricultural	17.00 to 17.50
Cincinnati No. 1 Machinery cupola (net tons dealers)	17.00 to 17.50
Cleveland, cupola	16.75 to 17.25
Detroit (net tons)	14.50 to 15.00
Eastern Pennsylvania, cupola	17.50 to 18.00
New York, cupola (dealers)	14.50 to 15.00
Pittsburgh, cupola	16.00 to 16.50
San Francisco, delivered	20.00 to 21.00
Seattle	16.50
St. Louis, railroad	15.50 to 16.00
St. Louis, agricultural	16.00 to 16.50
St. Louis, machinery	18.00 to 18.50
Valleys	17.50

HEAVY CAST

Boston	17.00 to 17.50
Buffalo (breakable)	13.75 to 14.25
Cleveland	13.00 to 13.25
Detroit (Automobile) (net tons)	19.50 to 20.50
Eastern Pennsylvania	16.50 to 17.00
New York (dealers)	13.50 to 14.00
Pittsburgh	14.50 to 15.00

MALLEABLE

Boston, railroad	18.50 to 19.00
Buffalo	16.75 to 17.25
Chicago, agricultural	15.00 to 15.50
Chicago, railroad	16.50 to 17.00
Cincinnati, railroad (dealers)	14.00 to 14.50
Cincinnati, agricultural (dealers)	13.50 to 14.00
Cleveland, agricultural	17.50 to 18.00
Cleveland, railroad	18.50 to 19.00
Detroit	14.00 to 14.50
Eastern Pennsylvania, railroad	16.50 to 17.50
Pittsburgh, railroad	17.50 to 18.00
St. Louis, agricultural	13.50 to 14.00
St. Louis, railroad	14.75 to 15.25

Miscellaneous Scrap

RAILS FOR ROLLING
5 feet and over

Birmingham	$15.00 to 16.00
Boston (dealers)	11.50 to 12.00
Buffalo	17.00 to 17.50
Chicago	14.75 to 15.25
Cleveland	17.00 to 17.25
Eastern Pennsylvania	17.00
New York	14.00 to 14.50
Pittsburgh district	17.00 to 17.50
St. Louis	14.75 to 15.25

LOCOMOTIVE TIRES

Chicago, No. 1	17.00 to 17.50
Chicago, cut	16.50 to 17.00
St. Louis, No. 1	16.50 to 17.00

LOW PHOSPHORUS PUNCHINGS

Chicago	15.00 to 15.50
Eastern Pennsylvania	17.00 to 18.00
Pittsburgh	18.50 to 19.00

Scrap

Decline Continues and New Low Prices Are Reached—Buying in Small Volume

NEW low levels have been reached in quotations on iron and steel scrap, with expectation of further decline in the West, while in the East dealers believe yard stocks may be accumulated. General consumer interest continues absent and buying is kept down to current needs. Railroad offerings and industrial production are heavy.

Chicago, May 25.—Majority opinion is that iron and steel scrap will sink still lower but there is increasing evidence that the decline is losing momentum. This has precipitated more divergent appraisals of the market. Claims are made that heavy melting steel has been bought at $12, while some large dealers say that they are unable to buy tonnages below $12.25. It is doubtful whether melters would pay more than $12.25, but some sellers say they would not let go of a tonnage below $12.50. Steel users are tempering their purchases, and rejections are more frequent.

Boston, May 25.—While consumer demand for scrap iron and steel continues desultory, dealer buying activity increased during the past week. Heavy melting steel has been taken at $10.75 on cars Boston in the face of a maximum eastern Pennsylvania delivered market of $15, which figures back to about $10.60 on cars.

New York, May 25.—Trading in scrap continues light, with prices on many grades unchanged. It would not be surprising to some in the trade if Bethlehem Steel Co. next purchase would be at $14.50, and should this price be done, it would be the first time in many months. A Coatesville, Pa., consumer has recently closed on railroad steel or equivalent at $15.50, delivered. Turnings are moving in restricted volume to Phoenixville, Pa., and Harrisburg, Pa., at $13.50 and $13, delivered, respectively, consumers' buying price. Harrisburg is also taking bundled skeleton steel at $13, delivered.

Philadelphia, May 25.—Prices of iron and steel scrap are declining sharply and have reached a level where some dealers have begun to accumulate tonnage. However, prices do not encourage small dealers to lay down scrap. Buying by consumers is in small, scattered tonnages.

Buffalo, May 25.—Scrap is moving briskly although dealers rather than consumers are responsible for most activity. Most large dealers hold substantial contracts and are having some difficulty in getting enough good material to make all scheduled shipments. This condition is stabilizing prices in a market in which little new business with consumers is being done.

Pittsburgh, May 25.—Since the purchase of a few thousand tons of heavy melting steel here late last week by an Ohio interest, the scrap market has shown no real activity. A few single carloads have been taken in at quoted prices but as a rule consumers are maintaining an attitude of indifference. Some cannot be interested even at figures below $16. Dealers are offering and paying $15.50 delivered certain points where they have taken orders. A railroad awarded a small tonnage of heavy melting steel on a list last week at $15.80. On rerolling rails the top of the market is $17.50 and steel specialties occasionally sell in small lots at that figure. Bids went in yesterday on the Baltimore & Ohio railroad's list of 33,000 tons.

Cleveland, May 25.—Not only is there a dearth of iron and steel scrap buying on the part of consumers, but the latter are holding up shipments on contract. One steelmaker still is taking blast furnace scrap but has embargoed tonnage for open-hearth furnaces.

Cincinnati, May 25.—Curtailment of operations by steel works has further depressed iron and steel scrap. Specifications on contracts, are growing less and dealers are experiencing difficulty in interesting users in any grade for further delivery.

Detroit, May 25.—Weakness continues to feature iron and steel scrap. Dealer activity is low. Prices continue nominal.

St. Louis, May 24.—Oversupplies, weakness and dullness are the features of iron and steel scrap. Consumers are buying little even recent radical price declines have failed to arouse interest. Dealers are rapidly running out of orders, and see no sign of improvement.

Birmingham, Ala., May 24.—Large melters of heavy melting steel, cast and other class of scrap give no intimation when they will start buying in quantity. Delivery is not being disturbed. And few orders have been cancelled. Quotations have been stationary several weeks, though weak.

Sheets

Specifications at Pittsburgh Good—Valley Business Dull—Black Easier at 3.15c

SHEET specifications have continued to improve in the Pittsburgh district, those for the leading interest in the past week being larger than in any of the preceding six weeks and only 2000 tons below normal. A dearth of specifications on valley mills is tending to unbalance rolling schedules. Black sheets are easily available at 3.15c, and galvanized at 4.40c.

SHEET PRICES, PAGE 1388

Pittsburgh, May 25.—Improvement in sheet specifications became more pronounced last week. The American Sheet & Tin Plate Co.'s total was larger than any one of the six preceding weeks and was but 2000 tons under normal. This included some automotive tonnage wanted in a hurry; some agricultural implement sheets; blue annealed sheets for railroad cars and other uses; electrical sheets for transformers, etc.; sheets for metal lath and other forms of building construction. Prices show no improvement. While quotations below 3.15c on black sheets have appeared in one or two directions, 3.15c to 3.35c is the full market range. The usual selling price is 3.25c. Price ranges on other grades are the same as a week ago. Operations have declined a trifle and while the number of sheet mills active remains the same, the number of turns they are operated is reduced so that the general average for the industry is perhaps nearer 60 than 65 per cent.

Boston, May 25.—Black sheets range from 3.20c to 3.25c, Pittsburgh, and galvanized sheets have dropped to 4.40c to 4.50c, with sales reported at both levels. Inquiry holds fairly strong.

Philadelphia, May 25.—The sheet market is easy, though not clearly defined. The firmest product is blue annealed which usually are 2.40c, Pittsburgh, subject to concessions of $1 a ton in some instances. Black sheets are 3.10c to 3.25c, Pittsburgh, with lower and higher prices done occasionally. Galvanized usually are 4.40c, subject to concessions. Demand is smaller, but eastern mills are able to operate at 70 per cent or more.

Buffalo, May 25.—Sheetmakers report a fair number of small orders. The 3.25c, Pittsburgh, price on black sheets is easier to get on average business, it is reported, 3.15c being regarded as exceptional. Galvanized sheets are unchanged.

Youngstown, O., May 25.—Laxity of inquiry for practically all grades of sheets is current in the district market. Consumers are specifying in meager volume which in some cases has tended to unbalance rolling sched-

ules. Galvanized business is especially difficult to uncover, but market quotations from 4.40c to 4.50c continue to be maintained. Blue annealed show no increase in demand. The price on this grade is 2.40c to 2.50c. While some producers continue to take black business at 3.25c, the policy of meeting competitive quotations of 3.15c is broadening. While some producers of full finished are bearing on mills to ship tonnage against a figure below 4.30c, no concessions from this level have been granted as far as can be learned. District operations this week are 78 per cent of capacity.

Cleveland, May 25.—Further recession in buying by sheet consumers is noted. Prices continue easy. Black sheet sellers are holding openly to 3.25c, Pittsburgh, but several admit lots more than carloads usually are closed finally at 3.15c. Some prices lower than that minimum have been rumored under special conditions. Galvanized has steadied at 4.40c with one or two makers attempting to hold at 4.50c. Autobody is firm at 4.30c one automotive interest taking a good tonnage at this price within the week. Blue is unchanged at 2.40c.

Chicago, May 25.—Specifications for sheets, especially the lighter gages, showed improvement last week. Compared with a year ago incoming business reveals a gain of 25 per cent and makers are able to maintain their schedules, whereas a year ago they were curtailing. Consumption has developed a moderate trend downward but in the Chicago district it is probably at a higher rate than for the country as a whole. In the far reaches of the Chicago district prices continue to ease off but apparently reflect the situation at Pittsburgh more than that at Chicago. Chicago delivered prices on black sheets range from 3.40c to 3.50c and on galvanized from 4.65c to 4.70c. Blue annealed continue the strongest of all and are quoted at 2.65c, Chicago.

St. Louis, May 25.—Sheet specifications are below specifications, and new business is developing slowly, particularly for galvanized. Prices are unchanged, but the trend is easier. The Granite City Steel Co., division of the National Enameling & Stamping Co., during the first quarter of the year established a new high record for the sale of its sheets. The sheets also were distributed over a wider territory than ever before.

Tin Plate

Production and Shipments For First Half Setting New Record

TIN PLATE PRICES, PAGE 1388

Pittsburgh, May 25.—From present appearances the first half of the year will set a new tin plate production and shipment record. The first half of 1925 was 10 or 11 per cent greater than any previous first half in the history of the American Sheet & Tin Plate Co., and the first half of 1926 promises to be at least 10 per cent greater than it. Shipments still are high, although new business is not heavy. A large tonnage was taken by the leading interest for export. Some mills have reduced the number of working turns from 16 to 13. The general average of operations is about 85 per cent. The market price is unchanged at $5.50 and it is reported that price cutting is no more extensive than usual.

Philadelphia, May 25.—Some third quarter tin plate has been booked in this district at unchanged prices. The majority of requirements after June 30, however, are still pending.

Strip Steel

Demand from Automotive Sources Less and Shipments Decline

STRIP PRICES, PAGE 1388

Pittsburgh, May 25.—With shipments at 80 to 85 per cent of capacity this month, strip steel makers here report that incoming business of late has fallen off so perceptibly that from present appearances it would seem that 60 per cent schedules will prevail next month. The drop in tonnage has come mostly from automotive customers on hot strips, which was the mainstay of the market many weeks, other users in general consuming lines keeping up a fair specifying rate. Cold strip tonnage for May is not far behind that of April. Local producers claim that they are not meeting the competition encountered below 3.75c. The hot price still is firm at 2.30c.

Philadelphia, May 25.—Hot Strip continues firm at 2.30c and 2.50c Pittsburgh and is one of the firmest of steel products.

Cleveland, May 25.—Hot rolled strip buying has improved somewhat during the past few days. Although automotive demand for hot and cold rolled fails to show much improvement, general manufacturing requirements are heavier. Hot strip prices are held firmly at 2.50c on narrow and 2.30c on wide, Pittsburgh. Cold-rolled strip is steady at 3.75c, Pittsburgh, several makers claiming buyers are unable to develop lower prices.

Pipe

Line Pipe Activity Continues Good—Cast Makers Well Booked —Prices Are Steady

NEW inquiries for line pipe include a 100-mile line taking about 17,250 tons for a gas line at Oklahoma City. Other line pipe projects are pending but few are being placed. Miscellaneous business maintains mill operations 70 to 85 per cent of capacity. Cast inquiries are good and bookings continue equal to production. Prices generally are steady.

PIPE PRICES, PAGE 1388 AND 1428

Pittsburgh, May 25.—Pipe shipments this month are better than the total tonnage for April due largely to deliveries against line pipe backlogs. Among the few definite inquiries for gas and oil lines before the trade is one for a gas line in the Oklahoma City territory, 100 miles of 16-inch, taking approximately 17,250 tons. The 350-mile line to Denver has not as yet been placed. The Humble Oil & Refining Co. which is constructing a combination 4 and 6-inch line, 24 miles long from the Randado and Henne-Wich-Faris pools to Bruni, Texas, may build another line from Laredo district tank farm to Ingleside on Corpus Christi bay. Miscellaneous pipe business keeps up well from jobbers as well as from large users direct. Mills generally maintain 80 to 85 per cent schedules although the National Tube Co. varies between that and 70 to 75 per cent.

New York, May 25.—Municipal cast pipe inquiry shows a decided let up. During the past week little of importance has been noted in inquiry or lettings. Private inquiry also is less brisk, a seasonal development. Shops are well booked ahead. Prices continue firm.

Chicago, May 25.—The aggregate of moderate size buying by many small central western municipalities is good and is contributing largely to the condition whereby bookings at least equal production with most makers. Activity in this district is more marked than a year ago. Melvindale, Detroit, Mich., has rejected bids on 850 tons and it is assumed new ones will be asked. Cast pipe prices are unchanged on the basis of $53.20, Chicago, or 4-inch, $49.20 for 6 to 24-inch and $46.20 for over 4-inch.

Birmingham, Ala., May 24.—Lettings of cast iron pressure pipe showed some improvement recently and a better feeling is noted in soil pipe and fittings. Many shops making soil pipe are operating five days a week. Pressure pipe shops are assured business to warrant steady operation practically through the year. Prices are unchanged.

CONTRACTS PLACED

100 tons, Green Bay, Wis., to National Cast Iron Pipe Co.

CONTRACTS PENDING

850 tons, Melvindale, Detroit; bids rejected, but new ones expected to be asked shortly.

250 tons, Mankato, Minn.; pending.

Bolts, Nuts, Rivets

Specifications Light But Total Is Pleasing and Prices Firm

NUT AND BOLT PRICES, PAGE 1388

Pittsburgh, May 25.—New orders are not numerous in nuts and bolts although larger makers here maintain 50, 10 and 10 per cent off on large machine bolts and report fair business over the month. Incoming business compares favorably with April although during the past week the drop has been more decided. Operations still average about 65 per cent. Rivet orders are scarce and competition still is keen on any tonnage that comes up for attention. Larger producers are maintaining 2.60c but encounter 2.50c and lower in a few directions, which levels they do not meet.

New York, May 25.—Bolt and nut demand which continued good during the first half of May shows a sharp drop in the second half of the month. Prices continue firm at 50, 10 and 10 off.

Cleveland, May 25.—Specifications against rivet contracts have picked up somewhat during the past week but new business continues slow. The market is steady with large structural rivets 2.60c, base Pittsburgh. Bolt and nut demand is seasonally good with quotations unchanged.

Chicago, May 25.—Although still light, specifications for bolts and nuts in the last half of May have been better than first half. Some implement makers have been specifying more heavily against contracts to round out second quarter schedules. Prices are unchanged at 50, 10 and 10 off for large machine bolts, 70 and 10 off for small rivets and 2.75c, Chicago, for large rivets.

April Coke Output Drops; —Weekly Total Heavier

Washington, May 25.—Production of by-product coke in April fell off about 175,000 net tons compared with March, according to data just issued by the bureau of mines, department of commerce. Production from all coke plants was 4,583,000 tons, 79 per cent of which was by-product and 21 per cent beehive. Following is listed output monthly in 1926.

Monthly average	By-product coke	Beehive coke	Total
1923	3,133,000	1,615,000	4,748,000
1924	2,833,000	806,000	3,639,000
1925	3,332,000	893,000	4,225,000
January, 1926	3,804,000	1,381,000	5,185,000
February	3,500,000	1,402,000	4,902,000
March	3,777,000	1,158,000	4,935,000
April	3,602,000	981,000	4,583,000

Output for the week ended May 15 of beehive coke shows a drop of 8000 tons, a daily average of 34,000 tons compared with 35,000 tons in the week preceding. Production for 1926 to May 15 was 5.374,000 tons or a daily average of 46,000 tons compared with 4,387,000 in 1925 and a daily average of 38,000 tons.

Bars

Lower Price Applies on More Tonnage—Western Market Showing Further Revival

BUYING of steel bars has declined in the East, orders being fewer and for smaller tonnages. In the West the situation is better and orders are increasing from the low point of April. Quotations of 1.90c, Pittsburgh, apply to a larger range of business than last week, and small lots only bring makers 2.00c. Backlogs are generally less as shipments are heavy.

BAR PRICES, PAGE 13188

Chicago, May 25.—Consumption of bar mill products continues on a plane higher than the average for the country. The rate is not as high as at the end of first quarter, but the trend has been upward the past two weeks, reflecting a general improvement in the Central West. With an important maker of heavy finished steel here both sales and specifications last week were the best of any week since the beginning of April, while inquiry was the heaviest for any week save one since the week ending March 26. Despite rumors surrounding the automotive industry, there has not been any appreciable decline in demand for tonnage material. Some farm implement makers are rounding out second quarter needs. Cold drawn interests indicate no letup in demand. Short buying still is the rule, but outside of dearth of freight car buying there is no major bad spot here. Soft steel bars are quoted at 2.10c, Chicago, for the general trade, but the usual differential obtains on tonnage business.

Bar iron demand does not permit full week operations on a single turn basis. Rail steel bar demand is seasonably heavy and one maker is on a double turn schedule. Both are quoted at 2.00c, Chicago.

Boston, May 25.—Several manufacturers have bought round tonnages of bars during the week. Total sales, however, have declined and prices are slightly softer. Sales are reported at 1.95c Pittsburgh or 2.315c delivered.

Philadelphia, May 25.—Attractive tonnages of steel bars are now more generally commanding 1.90c, Pittsburgh while 2.00c still applies on smaller lots. Buying of bars continues restricted, for prompt lots, with a total somewhat less than a month ago. Demand for forging bars has fallen off noticeably, due to less activity in the automotive industry.

Buffalo, May 24.—Bar mill operation is about 75 per cent of capacity. The 2.265c price is being maintained. Small lot buying continues but a steady flow of orders is coming to mills with the total volume fairly satisfactory.

Pittsburgh, May 25.—Merchant steel bar orders are less numerous and smaller. Makers still maintain good operating averages and high shipments so that backlogs are being dissipated and orders are being run out without adequate replacement. While jobbers are still called upon to pay 2.00, large fabricators and other users are able to obtain steel bars supplies at 1.90c.

Cleveland, May 25.—Consumers are placing steel bar business a little more freely and May tonnage in this territory will show some improvement over April. The recent recession by principal mills to a price of 1.90c, Pittsburgh or 2.09c, Cleveland, seems to have helped to clarify the situation. The 1.90c price has now become more general except for small lots. Automobile builders now are negotiating with parts manufacturers for their last half requirements and several contracts of this sort have been closed.

Cold Finished Steel

Situation Unchanged In Orders And Production With Prices Firm

Pittsburgh, May 25.—Relation between production and shipments and between backlogs and incoming orders on cold finished bars is well maintained, according to large makers here. Finishers catering primarily to the automotive trade feel a decided lack of business, particularly one or two who are shipping little on orders from a large Michigan builder. These are operating single turn but other finishers maintain the 70 per cent average with a diversified demand and a wider distribution. The price so far remains firm at 2.50c.

Hoops and Bands

Automotive Demand Slack But Other Users Continue Active

HOOP PRICES, PAGE 1388

Pittsburgh, May 25.—Hot flat makers note a decided drop in automotive buying of hoops and bands. Other consuming lines however, continue to take fair sized lots and the price is strictly maintained at 2.50c. Operations are still averaging 85 per cent of capacity.

Approximately 40,000 cubic feet of free air at 32 degrees Fahr. and 14.7 pounds absolute pressure is blown into a 600-ton blast furnace a minute. This is equivalent to 2100 tons in 24 hours and practically equals the weight of all stock charged during the same period.

Structural Shapes

Heavy Volume of Awards Continues—Chicago Building Takes 7000 Tons—Inquiries Are Numerous and Involve Good Tonnages

HEAVY awards of structural shapes continue and lettings in the past few weeks are above the seasonal rate. Despite this, Chicago reports building permits running 10 to 15 per cent behind those of May, 1925. The largest award of the week was for the Builders' building at Chicago, taking 7000 tons. Railroad bridgework continues a heavy factor in the market. In the East several projects are active, including 2500 tons for the Pennsylvania. Chicago & North Western and Wabash roads placed 3600 tons. Some hesitancy still is evident in awarding tonnage. A group of 16 projects in New York took 9030 tons. A super highway for motor vehicles along Hudson river at New York will take about 50,000 tons.

STRUCTURAL SHAPE PRICES. PAGE 1388

New York, May 25.—Between 25,000 and 30,000 tons of shapes have been placed in this district during the week. Bridgework is a feature of the local structural market, several inquiries coming out and several orders either being placed or on the point of being placed. A lot of 2500 tons for bridges for the Pennsylvania railroad is among the larger items. Prices on both fabricated and plain material are fairly steady.

Boston, May 25.—Plain material ranges between 1.80c and 1.90c Pittsburgh with sales reported at both levels. Prospective bridgework is heavy.

Buffalo, May 25.—Shape prices have settled down to 2.165c, after mills had made an effort to establish a quotation of 2.265c, at least on ordinary lots. The lower price is being quoted quite freely in this district and is bringing out some business which had been deferred in the hope of such a price readjustment.

Pittsburgh, May 25.—The largest structural shape award of the week is for a bridge between Ambridge and Woodlawn, Pa., 2300 tons. Numerous smaller jobs are noted by fabricators. The usual figure on plain material still is 1.90c. United States engineers, Pittsburgh, are taking bids on dam No. 5 Allegheny river, to be built at Schenly, Pa., until June 21 requiring 700 tons of steel sheet piling.

Cleveland, May 25.—Quietness is unbroken in the local structural market. Fabricators are hard pressed for tonnage and larger sellers represented here expect little heavy inquiry during the near future. Manufacturers are buying plain material in fair quantity but specific jobs are few. Plain material prices are steady at 2.09c Cleveland or 1.90c Pittsburgh.

Chicago, May 25.—Building permits in the Chicago territory are running 10 to 15 per cent under a year ago and business being taken by local fabricators is keeping step. American Bridge Co. has taken 7000 tons for the Builders' building and 3600 tons for bridge requirements of the Chicago & North Western and Wabash railroads. Plans are out for the Quincy-Adams-Clark building, Chicago, requiring 6700 tons.

Beams are quoted at 2.10c, Chicago, for small business but less is done on larger tonnages.

Awards Compared

	Tons
Awards this week	51,555
Awards last week	28,505
Awards two weeks ago	41,205
Awards this week in 1925	24,315
Average weekly awards, April	23,376
Average weekly awards, 1926	27,583
Total awards to date, 1925	679,571
Total awards to date, 1926	603,221

CONTRACTS PLACED

9030 tons, are involved in the following 16 items:

East Sixteenth street substation annex for the New York Edison Co., New York, to the Shoemaker Bridge Co.

Residence for Mrs. Twombly, 900 Fifth avenue, New York, to the Shoemaker Bridge Co.; William Crawford, general contractor, 7 East Forty-second street, New York.

Substation for the New York Edison Co., 33 Gold street, New York City, to the Hedden Iron Construction Co. for fabrication only.

Loft, 50-58 West Thirty-seventh street, New York, to Levering & Garrigues Co.; Jatison Construction Co., general contractor, 280 Madison avenue, New York.

Loft, 39-43 West Thirty-seventh street, New York, to Levering & Garrigues Co.; Jatison Construction Co., general contractor, 280 Madison avenue, New York.

Loft, 50 West Thirty-ninth street, New York, to Levering & Garrigues Co.; Jatison Construction Co., general contractor, 280 Madison avenue, New York.

Column cores for a concrete warehouse for B. M. Maltz & Son, Varick and West Houston street, New York, to Levering & Garrigues Co.

Apartment, East Twelfth street and the Boardwalk, Brighton beach, Brooklyn, to the George A. Just Co.; the William Kennedy Construction Co., general contractor, 215 Montague street, Brooklyn.

Building for the St. John hospital, Atlantic avenue, Brooklyn, to the George A. Just Co.; William Kennedy Construction Co., general contractor, 215 Montague street, Brooklyn.

Alterations to a bank in Livingston street, Brooklyn, to the George A. Just Co.; William Kennedy Construction Co., general contractor, 215 Montague street, Brooklyn.

News Syndicate Co., building, 692 Pacific street, Brooklyn, to Post & McCord; Hegeman-Harris Co., Inc., general contractor, 360 Madison avenue. Steel to American Bridge Co.

Alterations and additional floors at the Heit Building Corp. structure, 313-15 West Thirty-fifth street, New York, to a local fabricator, fabrication only; Thompson & Starrett Co., general contractor, 250 Park avenue.

Free Arts club, 250 West Eighty-fifth street, New York, to the Taylor-Fichter Steel Construction Co.

6-story garage, Fifty-eighth street and Eleventh avenue, New York; to the Taylor-Fichter Steel Construction Co.; Vincent Valentine Contracting Co., owner and general contractor, 1361 Findlay avenue.

15-story apartment, 37-41 West Forty-sixth street, New York, for the 41 West Eighty-sixth street Corp., New York, to the Hedden Steel Construction Co.

5-story office for J. J. Schubert, 234-36 West Forty-fourth street, New York, to the Hedden Steel Construction Co.

7000 tons, Builders' building, Chicago, to American Bridge Co.; John Griffiths & Son Co., 112 West Adams street, Chicago, contractor.

4500 tons, Louis Jerbino apartment, New York, to Paterson Bridge Co.

2300 tons, bridge for Beaver county, Pennsylvania, between Ambridge and Woodlawn, Pa., to the American Bridge Co.

2000 tons, Wabash railroad shops, Decatur, Ill., to Mississippi Valley Structural Steel Co.

2000 tons, additional for Morava works of McClintic-Marshall Co. at Chicago, to company's own shops.

1900 tons, bridge requirements of Chicago & North Western railroad for 1926, to American Bridge Co.

1800 tons, State Bank building, Albany, N. Y., erection to Post & McCord, fabrication to American Bridge Co.

1700 tons, Wabash railroad bridge near Decatur, Ill., to American Bridge Co.

1500 tons, Home Savings bank, Albany, N. Y., to McClintic-Marshall Co.

1300 tons, building at Madison and LaSalle streets, Chicago, to McClintic-Marshall Co. Frank D. Chase Inc., 720 North Michigan avenue, Chicago, architect.

1200 tons, 15-story apartment, Seventy-seventh street and Madison avenue, New York, to Easton Structural Steel Co.

1100 tons, miscellaneous jobs in the greater Pittsburgh area for different general contractors and fabricators, to the Bethlehem Steel Corp.

1100 tons, hospital, Glen Cove, L. I., to the Owego Bridge Co.; Bunce & Jorgenson Inc., general contractor.

1000 tons, 14-story apartment, Thirty-ninth street and Lexington avenue, New York, to Easton Structural Steel Co.

890 tons, stores and garages, Rye, N. Y., to the Universal Iron Works Inc.; Stinson, Bell & Stone Inc., general contractors, 270 Madison avenue, New York.

700 tons, highway bridge in Somerville, Mass., to independent fabricator.

650 tons, Commercial Union building, San Francisco, to Pacific Rolling Mill Co.

600 tons, theater, Baltimore, to the American Bridge Co.

600 tons, main building and grit chamber for north side sewage disposal plant for Sanitary District of Chicago, 910 South Michigan avenue, Chicago, to American Bridge Co.

600 tons, Chemistry building, New York university, New York, to Hinkle Iron Co.

600 tons, Multnomah stadium, Portland, Oreg., to Poole & McGonigle.

500 tons, warehouse for Gary Heat, Light & Power Co., Gary, Ind., to American Bridge Co.

500 tons, Lincoln Oil & Refining Co., Robinson, Ill., to Mississippi Valley Structural Steel Co.

450 tons, 8 bridges for department of agriculture, bureau of roads for erection in the Pacific Coast states, to Vincennes Bridge Co.

425 tons, civic stadium at Portland, Oreg., to Poole & McGonigle.

400 tons, bridge for the New York Central

railroad, Hoffmans, N. Y., to an unnamed fabricator.
350 tons, power plant for the Phoenix Utility Co., Pine Grove, Pa., to the Jones & Laughlin Steel Corp.
300 to 400 tons, mechanical building, Case School of Applied Science, Cleveland, to National Iron & Wire Co. through Sam Emerson Co. general contractor.
300 tons, 16-story apartment, Ninety-eighth street and West End avenue, New York, to Easton Structural Steel Co.; Lucian Pisciotta, general contractor, 563 East Tremont avenue, New York.
300 tons, repair shops for the Southern railway, Knoxville, Tenn., to an unnamed fabricator.
290 tons, building for the Krex Carpet Co., Newburgh, N. Y., to the Palmer Steel Co.; B. M. Higgins, contractor.
285 tons, additional floors to building at 258 Fifth avenue, New York, to the Hedden Iron Construction Co.; this represents a change in plans; originally, it was planned to build an addition facing Twenty-ninth street and this job was reported in the previous issue as involving 1100 tons and going to the Hedden company.
275 tons, Motor Mart extension, Boston, to New England Structural Co.
250 tons, Galgano garage, New Rochelle, N. Y., to the Palmer Steel Co.
250 tons, Fort Jackson hotel, Waynesburg, Pa., to the Jones & Laughlin Steel Corp.
200 tons, parochial school, 308 East 110th street, New York, to the National Bridge Works.
200 tons, Nathan Hale school, New Britain, Conn., to the Palmer Steel Co.; Michael Conner, contractor.
200 tons, bridge, Brattleboro, Vt., to McClintic-Marshall Co.
200 tons, unstated job, Milwaukee, to Milwaukee Bridge Co.
190 tons, apartment, Franklin and Sutter streets, San Francisco, to Golden Gate Iron Works.
175 tons, alterations and addition to building for Christian Board of Publication, St. Louis, to Mississippi Valley Structural Steel Co.
165 tons, lecture hall and cafeteria, 207 Ryerson street, Brooklyn, N. Y., to the Buckingham Steel Co.
150 tons, garage for the Bower Co., Sewickley, Pa., to the Jones & Laughlin Steel Corp.
150 tons, Franciscan theology building, Granby, Mass., to the Palmer Steel Co.; William Martin & Sons, Bridgeport, Conn., general contractors.
150 tons, machine shop for New York, New Haven & Hartford railroad, East Hartford, Conn., to the Palmer Steel Co.
150 tons, college of pharmacy, Albany, N. Y., to the Palmer Steel Co.; Finn Constructing Co., contractor.
140 tons, Irving theater, Irving Park boulevard and Austin avenue, Chicago, to Vierling Steel Works.
125 tons, nurses' home, St. John's hospital, Pittsburgh, to the Jones & Laughlin Steel Corp.
125 tons, Southern Serrias Power Co., San Bernardino, Calif., to Union Iron Works.
125 tons, in the aggregate, building for the Federal Bearing Co., Poughkeepsie, N. Y., Fred T. Lei Co., contractor; and building for the C. & P. Electric Co., Springfield, Mass., Sellilli & Rock, contractors, to the Palmer Steel Co.
100 tons, basketball pavilion for University of Oregon, Eugene, Oreg., to Poole & McGonigle.
100 tons, Cragmount school, Berkeley, Calif., to Steel Construction Co.
100 tons, shed for the Lee Lime & Cement Co., Lee, Mass., to the Palmer Steel Co.
100 tons, apartment, Denver, to Minneapolis Steel & Machinery Co.

CONTRACTS PENDING

15,000 to 20,000 tons, apartments, hotel, garage and power house for the Prospect Hill Corp., Fortieth to Forty-fourth street, along the East River, New York; figures likely to be asked within the relatively near future; Fred French interests sponsor the project.
5000 tons, theater and office building for the Rowland & Clark Co., Pittsburgh; bids about to be asked.
4000 tons, Midland club, Adams and La Salle streets, Chicago; K. M. Vitzthum & Co. Inc., 307 North Michigan avenue, Chicago, architects.
2500 tons, bridges for the Pennsylvania railroad; bids asked.
2200 tons, Fox theater, San Francisco; pending.
2000 tons, theater and office building for Loew & Co., Inc., Pittsburgh; bids about to be asked.
1500 tons, gymnasium for the University of Pennsylvania, Philadelphia, pending.
1160 tons, viaducts in Seventy-ninth street causeway across Biscayne bay, Miami, Fla.; bids in June 15 by G. F. Holly, clerk of board, county commissioners.
1100 tons, athletic club, Miami, Fla.; pending.
1000 tons, St. Louis Car Co., St. Louis; action on bids soon.
900 tons, G. & E. Blum loft building, 257 West Thirty-eighth street, New York; pending.
736 tons, sheet steel piling for dam No. 5, Allegheny river, Schenley, Pa.; United States engineers, Pittsburgh, taking bids, June 21.
600 tons, office, Germantown, Pa.; pending.
500 tons, alterations to new vault, Union Trust Co., Chicago, bids in; B. H. Marshall, 612 Sheridan road, Wilmette, Ill., Chicago, architect.
500 tons, mill building for the Downey Paper Co., Downey, Pa.; pending.
400 tons, apartment, California and Jones streets, San Francisco; pending.
300 tons, bank, Holyoke, Mass.; bids asked.
300 tons, building for Pacific Gas & Electric Co., Mount Shasta, Calif.; pending.
300 tons, Orpheum theater, San Francisco; pending.
300 tons, freight station for the Pennsylvania railroad at Woodlawn, Pa.; bids being asked.
260 tons, American Smelting & Refining Co., for treaters, Selby, Calif.; pending.
200 tons, five bridges for the Norfolk & Western; pending.
200 tons, bridge for the Reading Co.; pending.
200 tons, airplane hangar, Ford Motor Co., Lansing, Ill.; general contractors' bids in.
185 tons, girder span, Chicago, Rock Island & Pacific railroad, Joliet, Ill.; bids in.
150 tons, plant addition for J. B. Hilliard & Sons, Louisville, Ky.; bids in.
100 tons, Sharon, Pa., grade school; bids being asked.
100 tons, Oppenheimer's store building, Tarentum, Pa.; bids being asked.
Several hundred tons, 6-story Chapman loft building, 695 Fifth avenue, New York; pending.

Concrete Bars

Volume Holding High as Road Work Continues Heavy —Inquiries Numerous

SALES of concrete reinforcing bars continue heavy as road-building operations increase their demands. Inquiries are numerous but small tonnage work still is predominant. In the Chicago district awards are running 15 per cent behind last May. Prices show steadiness, holding to 2.00c, Pittsburgh equivalent, except where unusually attractive tonnage is involved.

REINFORCING BAR PRICES, PAGE 1388

Chicago, May 25.—Whether reinforcing bar sales for the first half will approximate the high level of the first half of 1925 depends largely upon the awards of the next weeks. May awards have been running 15 per cent under last May. Warehouses are quoting billet reinforcing bars at 2.60c and rail steel at 2.00c.

Boston, May 25.—An award of 300 tons for a building for Boston Gas Co. was made to Joseph T. Ryerson & Son Inc. Much work is in sight. Prices are steady.

Pittsburgh, May 25—Included in the recent state highway lettings were a number for which the Kalman Steel Co. will furnish about 500 tons of reinforcing concrete bars. Building awards still are confined to the small lots. Sellers have taken a firm stand at a minimum mill price of 2.00c, denying having quoted 1.90c.

Buffalo, May 25.—Reinforcing bar demand continues good in this district. Mills are booking considerable business. The prevailing price on mill shipment lots is 2.25c, and stock shipment at 2.75c.

Cleveland, May 25.—Concrete bar work is opening up again in this territory, although slower than sellers had anticipated. Signing of the contract for the Willow sewage disposal plant taking 2500 tons is expected to result in placing of the steel shortly. On ordinary lots of new billet steel, 2.19c Cleveland or 2.00c Pittsburgh is firm. Where tonnage is attractive in size and fits in with mill rollings, 1.90c Pittsburgh is quoted. Rail steel is steady at 1.80c at 1.90c mill.

Awards Compared

	Tons
Awards this week	7,217
Awards last week	10,215
Award two weeks ago	5,255
Awards this week in 1925	4,370
Average weekly awards, April	8,290
Average weekly awards, 1926	5,679
Total awards to date, 1925	134,606
Total awards to date, 1926	120,791

CONTRACTS PLACED

1600 tons, addition, Motor Mart garage, Boston, to Concrete Steel Co.
1250 tons, sea wall, Maracaibo, Venezuela, to Concrete Steel Co. Raymond Concrete Piling Co., New York, general contractor.
900 tons, ramps at Jersey City, N. J. for Holland vehicular tunnel, to Day & Goater
800 tons, Illinois-Pacific Glass Co. building, San Francisco, to unnamed interest.
600 tons, Varick and Charlton streets, building, New York, to Day & Goater.
500 tons, Pennsylvania state highway road work, several different lettings through various contractors, to the Kalman Steel Co.
450 tons, plant addition, Crosley Radio Co., Cincinnati, to Pollak Steel Co.
400 tons, garage at Twelfth and Chester streets, Cleveland, to Bourne-Fuller Co. Crowell & Little Construction Co. general contractor.
300 tons, foundation and superstructure, Parker house, Boston, to Barker Steel Co.
300 tons, office building, Boston Gas Co. to Joseph T. Ryerson & Son Inc.
250 tons, Baltimore & Ohio cold storage warehouse, Philadelphia, to Milton Mfg. Co. U. G. I. Contracting Co., general contractor.
185 tons, building for the A. A. Lane Construction Co., Youngstown, O., through Paterson & Leitch Co., Cleveland, as announced last week; to the Jones & Laughlin Steel Corp.
170 tons, Muir department store, East Orange,

(*Concluded on Page* 1404)

Rails, Cars

Little New Inquiry for Equipment—26 Locomotives Awarded in Two Lots—Rails Still Active

INQUIRIES for railroad equipment are few and small. The Delaware & Hudson has entered the market for 300. Two roads closed on 14 and 12 locomotives, but no action has been taken on larger inquiries. Rail business continues active at Chicago, with mills unable to meet specifications. Track material buying is spotty but generally good. Light rail prices are weak.

RAILROAD TRACK MATERIAL PRICES, PAGE 1388

Chicago, May 25.—The Southern Pacific inquiry for 24,000 tons of rails continues the largest prospective business in this market; the actual award has not yet been made but the Colorado and Tennessee companies are expected to receive it. Rail mills in the Chicago district still are operating at capacity and find it difficult to satisfy all specifications. Last week's business in track fastenings included 4000 tons of tie plates, which still are quoted at 2.25c to 2.35c, and 1000 tons of spikes and bolts.

Unless some freight car business develops within the next two weeks sharp curtailments in western shops are due next month. Passenger car schedules are relatively longer than those of freight cars. The Chicago & North Western is repairing 500 stock and 500 box cars in its own shops.

Boston, May 25.—Buying of miscellaneous railway material improved at Boston during the week. Frog and switch material and bolts and spikes particularly have been active. The Boston & Albany has been buying for a new switch yard.

New York, May 25.—Dullness continues to characterize the Eastern car market. While two large lists are up for the Lackawanna and Jersey Central, no action has yet been taken and such trading as prevails involves only small scattered lots. Fresh inquiry is slack. Locomotive buying includes orders for 12 and 14 locomotives. Mitsui & Co. has booked an order of 6000 tons of 75-pound rails from Japan, the Steel corporation getting the tonnage.

Philadelphia, May 25.—The department of city transit has awarded 2884 gross tons of 100-pound rails, 205,000 screw spikes, and 3740 pairs of splice bars from the Bethlehem Steel Co. for its Broad street subway between city hall and Olney avenue. Bids will be opened June 16 for track work in this section. Bids will be taken in July for trackwork at the terminal yard at Olney avenue. Several tonnages of light rails were placed last week, aggregating about 2000 tons. Most makers are asking $34 Pittsburgh per gross ton for 12 to 50-pound rails, but the $32 price has not disappeared.

Pittsburgh, May 25.—Light rail business witnessed a slight pick-up this past week with a number of coal mines in West Virginia and other districts coming into the market for trackage. Several single carload orders were noted and one or two of larger proportions at the $34 figure.

Track accessories are quiet, with prices in the main unchanged. Small lots of spikes occasionally are ordered and one or two larger tonnages of tie plates now are pending. On the latter 2.35c is the maintained figure.

ORDERS PLACED

Union Oil Co., 35 tank cars, to the General American Tank Car Corp.
The Andes Copper Mining Co., 26 tank cars, to the American Car & Foundry Co.
Anglo-Mexican Petroleum Co., five tank cars, to the General American Tank Car Corp.
Broken Hill Proprietary Co., Australia, two air dump cars, to the Clark Car Co.
Weatherford Mineral Wells & Northwestern railway, 300, 50-ton automobile cars, to American Car & Foundry Co.
Chicago surface lines, Chicago, 100 street cars, bodies, 34 to Cummings Car & Coach Co., Paris, Ill., 33 each to J. G. Brill Co., Philadelphia and St. Louis Car Co., St. Louis. Trucks to be furnished by the Brill company, wheels by Illinois Steel Co., axles by Carnegie Steel Co., and electric equipment by General Electric Co. and Westinghouse Electric & Mfg. Co.
The Toledo, St. Louis & Western has placed 1000 tons with the Bethlehem Steel Co.
International Railroad of Central America, 200 box cars, to Gregg Co., Inc.
Consolidation Coal Co., 100 mine car bodies, to Lorain Steel Car Co.

LOCOMOTIVE ORDERS PLACED

Union Pacific, 14 locomotives, to the American Locomotive Co.
Northern Pacific, 12 locomotives, to the American Locomotive Co.
Southern Pacific, snow plow, to the American Locomotive Co.
The Red River Lumber Co., 100-ton oil, electric locomotive, to the American Locomotive Co., the General Electric Co., and the Ingersoll-Rand Co.
Chicago, West Pullman & Southern, one switch engine, to the Baldwin Locomotive Works.

ORDERS PENDING

Delaware & Hudson, 300 composite hopper cars; bids asked.
Louisville & Nashville, 50 caboose cars; pending.
Seaboard Air Line, 15 to 20 passenger coaches; bids asked.
South African railways, 75 bogie fruit wagons; bids asked.
Gulf, Mobile & Northern, two combination baggage and mail cars; pending.
Reading Co., four cafe cars; pending.
Chicago & North Western railway, 500 stock car bodies; pending.

Wire

Demand Is Ahead of Last Year and Prices Are Firm—Jobbers Moving Stocks

ALTHOUGH demand for wire and nails is below expectations of producers, sales are in excess of movement a year ago. Prices are firm and operations are steady at the prevailing rate. Jobbers are moving stocks and this brings orders for replenishment. Buying is mostly in small lots and no effort is apparent to accumulate stocks in warehouse or consumer's plant.

WIRE PRICES, PAGE 1388

Chicago, May 25.—Makers of wire and wire products express more confidence in the general situation. Although short buying is pronounced, the volume of business in jobbing and manufacturing lines combined is running ahead of the corresponding period of last May. With the leading interest this improvement is 25 per cent. Stocks at mills and in the hands of jobbers show practically no change over the past 30 days. Jobbing demand for nails continues better than that for other products. Western mill operations will average 50 to 60 per cent, running below 50 per cent for some lines and up to 85 for some manufacturing lines. Prices are holding at 2.55c, Chicago or western mill, for plain wire and 2.70c for wire nails, with occasional shading developed by competitive conditions in some districts.

Philadelphia, May 25.—Demand for nails is disappointing and wire demand also is smaller than had been expected. However, demand for both exceeds the same period last year. Nails are firm at 2.65c, Pittsburgh, and wire at 2.50c, Pittsburgh.

Boston, May 25.—Improvement in demand for automobile tire wire is reported and sales otherwise show no slackening. The price is unchanged at 2.65c Worcester and 2.875c Boston.

Buffalo, May 25.—Wire prices have steadied to a considerable extent. Road mesh is moving freely and standard wire products are in fairly well sustained demand.

Pittsburgh, May 25.—Within the past few days, representative wire products makers here had noticed a slight improvement in buying. Other jobbers customers have apparently been successful in disposing of some of their supplies and have had to reorder. These orders are not large but the tonnage represented is fairly large, mostly of single mixed carloads or single straight carloads of nails or fencing. Operations remain between 50 and 60 per cent. Prices are said to be firm on the basis of 2.50c for plain wire and 2.65c for wire nails.

Nonferrous Metals

Demand Is Spotty and Producers Backlogs Are Dwindling as Shipments Continue of Good Size—Prices Lack Strength

Prices of the Week, Cents a Pound

	Copper—Electro delivered	Copper—Lake delivered	Copper—Casting refinery	Spot Straits Tin, N. Y.	Lead New York	Lead East St. Louis	Zinc St. Louis	98-99% Aluminum	Spot Antimony	Ingot Nickel
May 19	13.87½	14.00	13.42½	61.50	7.75	7.55	6.85	27.00	11.87½	35.00
May 20	13.87½	14.00	13.42½	61.00	7.75	7.55	6.85	27.00	11.50	35.00
May 21	13.85	14.00	13.40	60.75	7.65	7.55	6.85	27.00	10.75	35.00
May 24	13.85	14.00	13.42½	60.87½	7.65	7.45	6.85	27.00	10.37½	35.00
May 25	13.85	14.00	13.42½	61.12½	7.65	7.45	6.87½	27.00	9.87½	35.00

NEW YORK, May 25.—Prices of zinc, lead and antimony have declined lately to figures well under those of a year ago, while copper and tin remain a little higher. Aluminum is about the same as a year ago, and nickel, which seldom changes, is a little higher than a year ago. But even copper and tin have gone down considerably from prices of early in the year. The question is, to what extent have these price slumps discounted dull business of the summer?

Buying of metals is spotty but for the most part light. Shipments have remained of good size, with the result producers and rolling mills have small backlogs. The latter fact is especially true in zinc and lead, while copper producers may be a little better protected. World production of these three metals is larger than ever. European news on the metal markets has not exerted much influence the past week but it is apparent that consumption cannot expand very rapidly over there. In this country there is reason to believe consumption will continue large even though some shrinkage is in process.

Rolled products—Mill products have been unchanged in prices in the past week, as changes in prices of ingot metals have been narrow. Most departments of mills are fairly busy, probably most slackness being in brass sheets. Copper wire is not so brisk as it was. Tubing mills are turning out a lot of material.

Copper—Mills have bought the red metal at 13.87½c Connecticut (⅛c more in Midwest) lately but in the past day or two buying has been unusually light. Possibly a little shading could be done on bids to producers, while in the outside market some metal has been sold for less but it was limited. Freight rates between many points, especially East to Midwest, probably will be increased about July 1 unless another suspension should be ordered.

Zinc—Buying of prime western has remained exceedingly light. Yet smelters are not offering freely but have been taking such business as came out, around 6.85c East St. Louis. Galvanizing consumption of zinc probably has been relatively lighter recently than sheet and brass consumption.

Tin—Prices of early metal have fallen several cents in the past 10 days but on futures the prices have changed little, in fact becoming a little firmer in the past day or two, about 2 cents under early metal, or close to 58.75c. Users have not bought a great deal beyond June, while the professional traders have shown more interest in forward positions. Dealers probably have been buying futures as they sold out prompt.

Lead—This market has been a puzzle lately, some parts of the market looking stronger and then others would move down. Last Friday the St. Louis market appeared to be going up after good buying, but as the New York market was less active the American Smelting & Refining Co. cut its contract price 10 points to 7.65c that day. The London market has been strong the past week.

World stocks of zinc continue to increase on May 1 totaling 43,100 tons as against 36,400 tons in the preceding month. This is the largest stocks have been in a long time. Figures just issued show that in 1925 consumption of zinc in galvanizing totaled 286,000 tons, an increase of 46,000 tons over the preceding year.

Tin consumed in the production of tin plate last year totaled 25,111 tons or larger than in other years. This increase was made in spite of the fact the amount of tin used per ton of plate was smaller.

Mill Products

Base prices cents per pound, f.o.b. mill

SHEETS	
High brass	18.87½
Copper, hot rolled	22.50
Zinc, (100-pound base)	11.25
Lead full sheets (cut ¼c more)	12.25 to 12.75
Aluminum, bright flat, up to 10 gage	37.50
SEAMLESS TUBES	
High brass	23.50
Copper	24.25
RODS	
High brass (round ⅝ to 2½-inch)	16.62½
Naval brass	19.37½
WIRE	
Copper, small lots	16.00
High brass	19.37½

Old Metals

Dealers' buying prices, cents per pound

HEAVY RED BRASS	
New York	8.75
Chicago	9.00
Cleveland	9.00 to 9.25
HEAVY YELLOW BRASS	
New York	7.25
Chicago	7.50 to 7.75
Cleveland	7.25 to 7.50
ZINC	
New York	4.00
Cleveland	4.00 to 4.25
HEAVY COPPER AND WIRE	
New York	11.50
Chicago	10.75 to 11.00
Cleveland	10.75 to 11.00
RED BRASS BORINGS	
New York	8.25
YELLOW BRASS TUBING	
Cleveland	7.25 to 7.50
LIGHT COPPER	
New York	9.25
Chicago	9.25 to 9.50
Cleveland	9.50 to 9.75
LIGHT BRASS	
Chicago	7.00 to 7.25
Cleveland	6.25 to 6.50
ALUMINUM	
Clippings	20.00 to 21.00
Borings, Cleveland	13.00 to 14.00
Cast	18.00 to 19.00

Secondary Metals

Remelt aluminum No. 12	24.00 to 24.50
Brass ingot, 85-5-5-5	11.75

Coke By-Products

Distillate Prices Strong—Demand Good —Sulphate Market Quiet

New York, May 25.—Strength continues to characterize light oil distillate prices. Industrial demand is holding up unusually well and further strength is due to continued upward tendency in motor fuel. Pure and 90 per cent benzols are holding at 25 cents works, in tanks, and 30 cents in drums, solvent naphtha and toluol, 35 cents in tanks and 40 cents in drums, and commercial xylol at 36 cents in tanks, and 41 cents in drums.

Sulphate of ammonia continues slack with prices nominally unchanged at $2.55 to $2.60 port, for material in double bags for export, and $2.60 to $2.65, delivered, for domestic consumption. Sellers look for little real activity until the fertilizer industry enters the market, possibly in June, for its regular seasonal requirements.

Coke Oven By-Products

	Spot	Contract
Per Gallon at Producers' Plants in Tank Lots		
Pure benzol	$0.25	
90 per cent benzol	0.25	
Toluol	0.35	
Solvent naphtha	0.35	(nominal)
Commercial xylol	0.36	(nominal)
Phenol	0.22	0.22
Per Pound at Producers' Plants		
Naphthalene flakes	0.07	
Naphthalene balls	0.08	
Per 100 Pounds Delivered		
Sulphate of ammonia	$2.62½	

Machinery

Inquiries Appear Much Better, But Sales Thus Far Are Unaffected—Unfilled Orders Drop—Price Increases Noted

RATHER generally, May has been a poor month for machinery sales. Business is about equal to that of April but in most cases better than a year ago. During the last week inquiries appear much better but have not affected sales. Market reports for the last few days indicated price increases in effect or pending, but it is extremely doubtful if these are indicative of a trend. It is believed some manufacturers have just determined their manufacturing costs and are revising prices accordingly. Tool manufacturers are operating at a good rate and thus are catching up on unfilled orders. Numerous railroads are in the market. Illinois Central probably will act on its list of 300 tools for the Paducah, Ky., shops within a few days.

New York, May 25.—Notwithstanding fair inquiry, tool buying in the past week has been decidedly spotty. During the early part of the month trading appeared to pick up, but has again slumped off, this time to a point below the April level. Of far reaching interest is what appears to be a general advance in chucks. According to cards issued by several leading manufacturers, the increase varies roughly from 20 to 30 per cent, depending upon the item. This is the first advance in several years—in at least some instances the first since the war, and is designed to offset the advance in costs. A tendency toward higher prices in machine tools is also noted. At least one shaper manufacturer has increased quotations and certain other manufacturers of this equipment are expected to do likewise. An Eastern manufacturer of precision bench lathes has advanced prices approximately 10 per cent and a New York State manufacturer of filing machines, saws, etc., is expected to make an advance around the latter part of this month. Interesting to the trade is the recent award of 1000 tons of structural steel for another addition to Edward B. Budd Mfg. Co.'s plant at Philadelphia. Award this past week of the heavy tonnage of steel for further plant additions for General Electric Co. also at Philadelphia is regarded as promising. At present General Electric Co. is confining its machine tool purchases to scattered items for various plants. Otis Elevator Co., Yonkers, N. Y., continues an active buyer. Irvington, N. J., high school has opened bids on a list of equipment, including eight lathes, one planer, one miller, one shaper, one drill press, two grinders, one hack saw and 10 wood-working machines.

Railroad inquiry includes a cylinder grinder and two wood-working machines for New York Centrol. In addition to recently letting contracts for an addition to its Readville, Mass., shops, New York, New Haven & Hartford has just awarded 150 tons of structural steel for a machine shop at its East Hartford, Conn., shops.

Boston, May 25.—Tool sales at Boston run considerably behind the April record and the market at present is dull. During the past week somewhat better inquiry appeared. A Lynn, Mass., manufacturer wants a 36-inch planer and another Lynn manufacturer is in the market for three heavy presses. Boston & Albany railroad is still considering a list of 20 tools. An East Boston manufacturer is in the market for used tools. Extensive press equipment is under active consideration by a Springfield, Mass., electrical manufacturer. Machine manufacturers within the district while still maintaining unchanged production report a falling off in unfilled orders. Prices are unchanged.

Pittsburgh, May 25.—The list of requirements for the Johnstown, Pa., trade high school involving 33 items, almost everything on the machine tool calendar, is the feature of the equipment market this week. The list includes such items as lathes, drill presses, shapers, milling machines, planers, hack saws, etc. The fact that bids are asked on the equipment all wired up ready to run makes it difficult for sellers at this distance to make quotations. Another small list has come out from Westinghouse Electric & Mfg. Co. for East Pittsburgh, Pa., involving a milling machine, riveting machine, multiple spindle drill press, and shaper. Pennsylvania railroad wants a 6-foot boring mill. Typical sales of the week include two saw tables for one buyer, two or three combination punches and shears to as many buyers, and one dealer sold a 24-inch shaper off the floor. Other single sales are noted but the trade generally admits a slowing up in the buying rate. Crane sellers too, are inactive.

CRANE ORDERS PLACED

Nine 20-ton overhead cranes for Illinois Central railroad, Paducah, Ky., to Shaw Crane Works.

Two 20-ton overhead cranes for Illinois Central railroad, Paducah, Ky., to Harnischfeger Corp.

Two ditchers for Reading Co., to American Hoist & Derrick Co.; these are in addition to one placed recently with same company.

Among single orders were: 15-ton, 3-motor crane for Carnegie Steel Co., Mingo Junction, O., to Northern Engineering Works; 25-ton, 4-motor crane for Long Island shops of Long Island railroad, to Milwaukee Electric Crane & Mfg. Corp.; 25-ton locomotive crane for Yarmouth Junction, Me., development of American Forest Products Co., to American Hoist & Derrick Co.; 10-ton locomotive crane for Missouri Valley Bridge & Iron Co., to American Hoist & Derrick Co.; 20-ton locomotive crane for National Lumber & Creosoting Co., for operation in Southwest, to American Hoist & Derrick Co.; 15-ton gasoline crawler crane for Sprague Construction Co., Far Rockaway, N. Y., to Link-Belt Co.; 30-ton locomotive crane for George A. Simms Construction Co., Philadelphia, to McMyler-Interstate Co.; tramrail system for Florence Pipe, Foundry & Machine Co., Florence, N. J., to J. W. Paxson Co.; 25-ton steam locomotive crane for Central Coal Co., New York, to Orton Crane & Shovel Co.; 12-ton gasoline operated locomotive crane for Harrison Engineering Corp., Kansas City, Mo., to Orton Crane & Shovel Co.; 7-ton caterpillar crane for De Laval Steam Turbine Co., Trenton, N. J., to Orton Crane & Shovel Co.; 7-ton gasoline operated caterpillar crane for Berthelet Pipe Foundry Co., Milwaukee, to Orton Crane & Shovel Co.; 5-ton electric crane for Fourteenth street station of New York Edison Co., New York, to unnamed builder; 60-ton handpower crane for Phoenix Utility Co., New York, reported for installation in Florida, to American Crane Co.; 20-ton handpower crane for Standard Oil Co. of New Jersey, Bayway, N. J., to unnamed builder.

CRANE ORDERS PENDING

175-ton overhead crane for Santa Fe railroad, Clebourne, Tex. shops; bids asked.

Cleveland, May 25.—Throughout the month equipment sales have been pretty flat. In most cases, May is little ahead of April and on about a par with one year ago. During the last week or so, inquiries have picked up but sales are unchanged. Orders are spotty and mostly for single machines. Except for a little equipment now and then, the automotive interests are inactive. Prices are holding well, with no advances in prospect. Used equipment continues in fair demand.

Chicago, May 25.—Inquiries for machine tools here are improving. So far, May is on a par with the previous month, but ahead of May last year. Railroads have a number of lists out and are expected to buy soon, the Illinois Central within a week or so on its list of over 300 tools for Paducah, Ky. The Belt Railway Co. is inquiring for an 8-foot lathe, 22-inch drill press and motor-driven blower. Chicago & North Western has a list calling for a 40-inch x 40-inch x 10-foot motor-driven planer, and a 10-foot flanging clamp. Buying is slightly better, mostly for single items. International Harvester Co. bought two multiple punches, 100-ton, for its Springfield, O., plant. Santa Fe railroad recently placed seven grinders. It is reported that high speed drill makers expect to increase prices about June 1. Prices are firm. All crane makers report a slump, overhead crane interests particularly. Locomotive crane builders state that May so far is below April. Railroads generally are not buying.

Warehouse

Buying Is Slipping Off Slightly Although Some Districts Report Continued Increases —Mill Price Weakness Being Felt

BUYING from iron and steel warehouses generally is steady, although some signs of recession are noted. Prices are steady, except where mill weakness tends to cause easiness in jobbers' quotations.

Demand in the New York district is being well sustained at a rate above April. Prices in the main are strong. The only tendency toward shading appears to be in sheets, more or less normal. Improvement noted recently in reinforcing bars continues.

Spasmodic buying of cold-finished and hot rolled merchant steel bars is noted by Pittsburgh warehouses. Demand generally has shrunk but apparently there has been no accompanying contraction in warehouse prices.

Sales of iron and steel by warehouse have eased up some although May is showing an increase over April and over May 1925. Sheets are falling off a little.

Volume of sales has slipped off some at Cleveland. Buying generally is failing to increase as anticipated. Prices are steady, although weakness of mill levels on sheets is expected to cause a revision in jobbers' prices within the week.

Activities in the Chicago market are steady, with prices firm Some mill shading has resulted in buyers holding off for lower mill prices, giving the warehouses the benefit of this tendency. May probably will equal or better April. Building continues active.

Demand at Detroit is fair. Tonnages being required are somewhat smaller than during the first part of May. Tonnage being moved is about 5 per cent less than in April but is considerably ahead of May 1925.

Further recession in demand is noted at St. Louis. Reinforcing concrete bars are active. A heavy call has developed from small highway contractors who are buying at the warehouses rather than direct from the mills.

Following its usual custom, the Michigan state tax commission has revised some of its tentative figures on iron ore mine valuations in Marquette county, reducing its figures by $1,658,350, on showing by owners.

Quotations in Cents Per Pound at Leading Market Centers

STEEL BARS

Boston	3.265c
Buffalo	3.30c
Chicago	3.00c
Cincinnati	3.30c
Cleveland	3.00c
Detroit	3.15c
Ft. Worth	3.90c
Los Angeles	3.20c
New York	3.24c
Philadelphia	3.00c to 3.20c
Pittsburgh	2.90c
Portland	3.00c
San Francisco	3.30c
Seattle	3.25c
St. Louis	3.15c
St. Paul	3.25c
Tulsa	4.06c

IRON BARS

Boston	3.265c
Buffalo	3.30c
Chicago	3.00c
Cincinnati	3.30c
Detroit	3.15c
Ft. Worth	3.90c
New York	3.24c
Philadelphia	3.00c to 3.20c
St. Louis	3.15c
Tulsa	4.06c

REINFORCING BARS

Boston	3.265c to 3.50c
Buffalo	3.30c
Chicago, billet	2.60c
Chicago, rail steel	2.00c
Cincinnati	3.30c
Cleveland	2.60c to 3.00c
Detroit	3.15c
Ft. Worth	3.75c
Los Angeles, C.L.	3.05c
Los Angeles, L. C. L.	3.30c
New York	2.95c to 3.15c
Philadelphia	3.15c
Pittsburgh	2.50c to 2.60c
San Francisco, C. L.	3.35c
San Francisco, L. C. L.	3.80c
Seattle	3.25c
Tulsa	4.06c
Youngstown	2.50c to 2.60c

STANDARD STRUCTURAL SHAPES

Boston	3.365c
Buffalo	3.40c
Chicago	3.10c
Cincinnati	3.40c
Cleveland	3.00c
Detroit	3.25c
Ft. Worth	4.50c
Los Angeles	3.20c
New York	3.34c
Philadelphia	2.70c to 3.00c
Pittsburgh	3.00c
Portland	3.10c
San Francisco	3.30c
Seattle	3.35c
St. Louis	3.25c
St. Paul	3.35c
Tulsa	4.16c

PLATES

Boston	3.365c
Buffalo	3.40c
Chicago	3.10c
Cincinnati	3.40c
Cleveland, ¼-inch and thicker	3.00c
Cleveland, 3/16-inch	3.225c
Detroit	3.25c
Detroit, 3/16-inch	3.45c
Ft. Worth	4.50c
Los Angeles	3.20c
New York (sheared and universal)	3.34c
New York (floor)	5.25c
Philadelphia	2.75c to 3.00c
Philadelphia, 3/16-inch	2.85c to 3.15c
Pittsburgh	3.00c
Portland	3.25c
San Francisco	3.30c
Seattle	3.25c
St. Louis	3.25c
St. Paul	3.25c
Tulsa	4.16c

NO. 10 BLUE ANNEALED SHEETS

Boston 3/16-inch	3.915c
Buffalo	3.90c
Chicago	3.50c
Cincinnati	3.60c
Cleveland	3.25c
Detroit	3.65c
Los Angeles	3.75c
New York	3.89c
Portland	4.25c
Philadelphia	3.50c
San Francisco	3.75c
Seattle	4.50c
St. Louis	3.60c
St. Paul	3.75c
Tulsa	4.56c

NO 28 BLACK SHEETS

Boston	5.25c
Buffalo	4.60c
Chicago	4.10c
Cincinnati	4.55c
Cleveland	4.10c
Detroit	4.25c
Ft. Worth	5.50c
Los Angeles	4.75c
New York	4.50c
Philadelphia	4.55c
Portland	5.25c
San Francisco	4.75c
Seattle	5.50c
St. Louis	4.60c
St. Paul	4.35c
Tulsa	5.16c

NO. 28 GALVANIZED SHEETS

Boston	6.25c
Buffalo	5.90c
Chicago	5.25c
Cincinnati	5.65c
Cleveland	5.25c
Detroit	5.50c
Ft. Worth	6.25c
Los Angeles (corr. 28 ga.)	6.00c
New York	5.65c
Philadelphia	5.75c
Portland	6.25c
San Francisco	6.00c
Seattle	6.50c
St. Louis	5.70c
St. Paul	5.60c
Tulsa	6.31c

BANDS

Boston	4.015c
Buffalo	4.05c
Chicago	3.65c
Cincinnati	3.95c
Cleveland	3.65c
Detroit	3.80c
Ft. Worth	4.65c
Los Angeles	4.05c
New York	3.99c
Philadelphia	3.75c to 3.90c
Pittsburgh	3.60c
Portland	4.25c
San Francisco	4.15c
Seattle	4.25c
St. Paul	3.90c
Tulsa	4.71c

HOOPS

Boston	5.50c
Buffalo	4.05c
Chicago	4.15c
Cleveland	3.65c
Detroit	4.30c
New York	4.49c
Philadelphia	4.00c to 4.25c
Pittsburgh	3.60c
Seattle	5.00c
St. Paul	4.40c

COLD FINISHED STEEL

	Rounds and hexagons	Flats and squares
Boston	4.05c	4.55c
Buffalo	3.90c	4.45c
Chicago	3.60c	4.10c
Cincinnati	3.85c	4.35c
Cleveland	3.90c	4.40c
Detroit	3.85c	4.35c
Los Angeles	5.25c*	.....
New York	4.00c	4.50c
Philadelphia	4.00c	4.50c
Pittsburgh	3.60c	4.10c
Portland	5.00c*	.....
San Francisco	4.25c*	.....
Seattle	5.00c*	.....
St. Paul	3.85c	.....
Tulsa	4.66c	5.16c

*Rounds only.

COLD ROLLED STRIP

Boston, 0.100 inch, 500 lb. lots	6.15c
Buffalo	6.35c
Chicago	6.25c
Cincinnati	7.15c
Cleveland, over 500 lb. lots	5.95c
Detroit	6.20c
New York	6.25c
Philadelphia	6.25c
Pittsburgh	6.30c

FOREIGN IRON AND STEEL

New York duty paid

Swedish, hollow drill steel	15.00c
Swedish iron bars round	6.75c
Flats and squares	7.00c

WELDED PIPE

Discounts from warehouse, New York City Standard Steel Pipe

WROUGHT STEEL PIPE

	Black	Galvanized
⅛-inch butt	—28	+21
¼ to ⅜-inch butt	—36	— 3
½-inch butt	—46	—29
¾-inch butt	—51	—37
1 to 3-inch butt	—53	—39
2-inch lap	—40	—22
2½ to 6-inch lap	—48	—35
7 and 8-inch lap	—44	—17
9 and 10-inch lap	—38	—14
11 and 12-inch lap	—37	—12

WROUGHT IRON PIPE

	Black	Galvanized
⅛ to ⅜-inch butt	+44%	+78%
½-inch butt	— 4	+19
¾-inch butt	—1	+ 9
1 to 1½-inch butt	—14	+ 6
2-inch lap	— 5	+14
2½-inch lap	— 9	+ 6
3 to 6-inch lap	— 3	+ 6
7 to 12-inch lap	— 3	+16

Coast Buying Is Better

In Spite of Larger Movement of Material Prices Are Softer—
Pipe, Rails and Structurals in Demand

SAN FRANCISCO, May 22.—(By Air Mail)—While buying is improving in nearly all lines, prices continue to soften. Lower quotations are understood to have been made during the past week on structural shapes, one quotation reported being 2.25c c.i.f. Coast ports on a fair sized tonnage. Most eastern mills, however, continue to quote 2.30c, to 2.35c c.i.f. The most important letting of the week was made by the Union Oil Co., Los Angeles, which placed 4340 tons of plates for tank work with three builders. It is understood it will place all the tonnage inquired for several weeks ago, but that the lettings will be extended over a period of several months. The Southern Pacific has come into the market for about 28,000 tons of rails. Building operations continue in good volume in spite of the carpenters' strike, which is still in progress.

Coast Pig Iron Prices

Utah basic	$26.00 to 27.00
Utah foundry	26.00 to 27.00
*English (2.75 to 3.25 sil.)	25.00
*German	23.50
*Belgian	22.00
*Indian	24.50
*Dutch	22.00
Anzan (Chinese) 2.50 to 3.50 sil. del. Seattle	25.50

*C.i.f. duty paid.

Pig Iron and Coke

Demand for pig iron lags. About 5000 to 6000 tons of coke has come in, and also a small shipment of foreign iron on contracts closed several weeks ago. Prices are fairly firm, and it is considered likely that slightly higher prices may be put into effect on some of the imported irons because of the British strike.

Bars, Plates and Shapes

The local carpenters' strike continues to interfere with construction work, and most reinforcing bar lettings are small. The warehouse for the Illinois-Pacific Glass Co., San Francisco, is being constructed, and a contract for 800 tons of foreign bars has been let. A highway bridge in Honolulu has taken 152 tons. New jobs are numerous, but contractors hesitate about going ahead because of the strike. Bar jobbers' prices are unchanged.

The Associated Oil Co. has awarded 600 tons for two barges to the Bethlehem Ship Building Co. and the Los Angeles Shipbuilding Co. The Union Oil Co. has divided 4340 tons between the Western Pipe & Steel Co., the Chicago Bridge & Iron Works, and the Lacy Mfg. Co. The entire tonnage is for tank work. The Nevada county irrigation district is in the market for 300 tons of light material for a pipe line, and the East Bay municipal utility district, Oakland, is expected to close bids soon on 100 tons for tunnel work and another 100 tons for a pumping plant, in connection with the Mokelumne river project. Prices are unchanged although slightly softer at 2.25c to 2.30c c.i.f.

The most active line at present is structural material, lettings for the week exceeding 2000 tons and new jobs calling for over 1000 tons. Prices are weaker, although Eastern mills with few exceptions quote shapes at 2.30c to 2.35c c.i.f. A quotation of 2.25c was made during the week, but whether business was closed at that price is not known, although the understanding is that it was. The Pacific Rolling Mill Co. took 650 tons for the addition to the Commercial Union building in San Francisco, and Poole & McGonigle took 600 tons for the Multonomah stadium at Portland, Oreg. An apartment in San Francisco is being figured and may require 400 tons, and the Orpheum theatre in the mission district calls for 350 tons.

Other Finished Material

B. Nicoll & Co. took 190 tons for Santa Anna, and the American Cast Iron Pipe Co. is low bidder on about 100 tons for Santa Cruz, Calif. No other lettings of importance have been closed. Several fresh inquiries are in fair condition and prices are unchanged.

Warehouse buying has improved slightly, but jobbers say most orders are light. Stocks are in fair condition and prices are unchanged.

Blue annealed sheets are being quoted at 2.40c base Pittsburgh, although no volume of business is being done. Galvanized sheets are 4.45c to 4.50 base Pittsburgh, or about 5.15c c.i.f. Local mills are active but no large inquiries have come up recently.

The Southern Pacific Co. has come into the market for 28,000 tons of rails. No action has yet been taken by the Southern Pacific on its inquiry for 3500 tons of shapes, nor on the 180 tons of rivets for which it inquired a week ago.

Northwest Meets Lull

SEATTLE, Wash., May 20.—General business appears to be slacking in some lines although as a whole conditions are satisfactory. The open shop plan was unanimously adopted by 57 general and subcontractors at Tacoma last week. Several of the building trades at Tacoma are asking increases. At Portland iron workers, bridge, structural and ornamental, are asking an increase from $9 to $10 per day and reinforcing steel workers are asking $9 per day.

Pig Iron and Coke

Foundry operations are less active as the peak of the spring rush appears to be past. Some larger plants engaged in marine and lumbering machinery are busy but work has eased off this month, and there is little interest in pig iron or coke. Inquiry is at a minimum and the markets show neither strength or activity. Prices are unchanged. Some foreign coke is afloat for delivery here but buying is low.

Bars, Plates and Shapes

There is fair activity in this market. However, buying is confined to small tonnages for quick delivery, forward orders being the exception. Prices are firm and unchanged at 2.35c for bars and shapes and 2.30c for plates. The local steel mill is still operating three furnaces, showing an unchanged output. No large tonnage awards for bars are pending.

Between 800 and 1000 tons of imported steel, largely bars and structurals, have been landed at Portland and Seattle this month. These lots have had little effect upon the market here although Portland prices appear to be more sensitive to foreign competition. Local exporters have had two inquiries for bars from the Hawaiian islands but the Orient seems entirely uninterested.

No large tonnages of structurals are pending. One or two bridge projects of considerable moment are announced but the details have not yet been worked out. The only plate contract of any size in this district involves 1200 to 1500 tons for a pipe line in Tacoma, award of which is to be made about the end of May.

Warehouse Trade Dull

Jobbers report no great change in the situation. Sheets are in good demand as are also all materials used in building. Trade is about on a level with April although it is apparent the usual midsummer dull season is close at hand. Warehouse prices are unchanged.

United States Cast Iron Pipe & Foundry Co., through H. G. Purcell, Northwest agent, has closed for about 100 tons of cast iron pipe for the new water system at Yakima. This is the first award of a number which will involve several hundred tons.

Demand for steel scrap is steady and prices are unchanged, $10.50 and $11 gross being paid by the largest buying interest here.

Broadcast Drop Forging Facts

Institute's Engineers To Give Wider Knowledge to Public, and Prepare School Text Book—Convention at French Lick Well Attended—Executives Mingle with Shop Men in Discussing Problems

PAPERS and discussions on various problems of the industry featured the third bi-annual convention of the American Drop Forging institute at French Lick, Ind., May 20 to 22. Sessions were attended by practically the entire membership, and many others interested in the industry.

All sessions were open to executives and practical shop men. Papers and discussions touched on sales and management, banking, cost, mechanical and metallurgical problems.

Broadening of the institute's activities was indicated by President L. W. Greve, Champion Machine & Forging Co., Cleveland, in his opening address.

"The drop forging industry has been passing through conditions which now have become more or less fundamental," he said. "The general industry is overexpanded as our statistics show. Some customers have been making this condition still worse by establishing or extending departmental forge shops, although through our cost department we can show them that this is not to their interest. Through our statistics we know the industry's capacity and we know the consumption of drop forgings, and details as to its class of equipment.

"The prime value of any trade association is eliminating 'guess work.' We can only get out of our institute and its work in proportion as we put in; the institute is not a cure-all, so to make its purpose pay, we must all help and put in our best.

"We feel that now is a proper time to add a new activity to the work of the institute and have our engineers impart their technical knowledge to the public through technical schools and the like by printed work, which should eventually become a valuable text book on drop forgings. This probably will take several years to complete and it may be found advisable or necessary to ask some other engineering society to collaborate with the institute.

Each year there are thousands of students graduating from technical schools to whom an authoratative work of this kind will be invaluable. I am positive that few of them know what a drop forging is, and its importance to all industry."

"The Drop Forging Industry" was the subject of a paper read by H. G. Stoddard, vice president Wyman-Gordon Co., Worcester, Mass. Mr. Stoddard pointed out the magnitude of the industry and its relation with others.

"The forging industry," he said, 'is very fortunate in that its principal customer is the automotive industry. The companies served by the forging industry are relatively few in relation to the volume of the business and the credit problem is therefore simpler. The forging industry supplying parts largely to the order of its customer is proportionately free from inventory problems. Its raw material is on a fairly uniform basis and does not represent so large a portion of its costs as in such industries as the textile, leather and the more expensive metals.

"This means that the problems of the forging industry are much more clearly confined to itself and less affected by outside elements. Our industry will continue to develop and more and more be recognized in the business world as one conducted by men of ability and character and as fully justified by the service it renders."

Charles J. Graham, president, Nut and Bolt association, gave an interesting talk on "Industrial Association Problems." "A Banker's View of Industry" was the subject of a paper presented by Allard Smith, vice president, Union Trust Co., Cleveland.

"At this writing," said Mr. Smith, "the outstanding economic events of the moment are the corollary effects from the recent strike in England, and a drastic and continuous decline in the prices of all stocks, particularly industrial stocks in the United States since the closing months of last year.

"In the United States industry in general is apparently passing through a corrective period which seems likely to continue throughout the summer, and probably into the early fall. The first quarter of 1926 seems to have proven better than many expected, but the latter part of April and early May show general recessions in volume and sometimes also in price.

"Opinion generally is that in the present period fundamentals will not be weakened; stability, though less spectacular, is corrective. Confidence in industry and its future is not shaken and financial strength obtains.

"Business men are 'digging in' for a period of intense competition and their rigorous study of cost reducing methods already shows itself in the heavy volume of inquiries prevalent among manufacturers of labor saving machinery.

"The increase in activity which seems probable early in September or October will carry premiums for the manufacturer who devotes the present interval to rigorous study of cost reducing methods. Intense price competition seems likely to increase rather than diminish, and the increase in net must probably be found in manufacturing costs."

J. P. Hopkins, vice president, Atlas Drop Forge Co., Lansing, Mich., presided at the second day session. Personnel Manager Kuechenmeister, Dominion Forge & Stamping Co., Walkerville, Ont., spoke on "Safety in the Forge Shop." This was followed by an address on "Elimination of Waste in Industry," by W. C. Wetherill, United States department of commerce. Harold F. Wood, metallurgist, Wyman-Gordon Co., read a paper "Applications of Metallurgy to Drop Forging," which was followed by one on "Forge Shop Production and Cost" by Frank Hatch, Moore Drop Forging Co., Springfield, Mass. "Cost Problems" was the subject of an address by R. T. Herdegen, president, Dominion Forge & Stamping Co., at the closing sessions. This was followed by a general discussion.

H. G. Stoddard was toastmaster at the annual banquet. C. W. Wright, Steel Car & Forge Co., Pittsburgh, presided at the smoker and entertainment. Present officers were elected the first of the year.

The Worcester, Mass., chapter of the American Society for Steel Treating recently elected the following officers: Chairman, Bert A. Davis, Fremont Casting Co.; vice chairman, E. D. Clark, Crompton & Knowles Loom Works; and secretary-treasurer, C. G. Johnson, Worcester Polytechnic institute.

Tariff Offsets German Bounty

Treasury Department Orders Countervailing Duty Against Pig Iron and Rolled Steel Products—Similar to Action Against Indian Iron—Shipments To Be Held Up Pending Payment

WASHINGTON, May 25.—The United States treasury department has ordered a countervailing duty assessed against German pig iron and steel products on which bounties or special benefits have been paid to the manufacturers in Germany. The action is similar to that taken by the department recently against imports of pig iron from British India. The amount of the countervailing duty has not been determined.

The order was issued yesterday by Lincoln C. Andrews, assistant secretary of the treasury, under authorization of section 303 of the tariff act. It directs a retaliatory duty equal to the bounty or subsidy said to accrue to certain German manufacturers of iron and steel articles through the export certificate agreement with the German Raw Steel syndicate. While this allowance or bonus does not constitute a government bounty, nevertheless section 303 of the tariff act applies with equal force upon a bounty or grant alloted on the production of merchandise by any foreign person, partnership, association, cartel or corporation.

About a month ago, the treasury department authorized a countervailing duty to apply on pig iron exported to the United States by the Tata Iron & Steel Co., of Calcutta, British India. Both of these countervailing duties will have the effect of checking immediately the movement of the foreign iron and steel that has been coming from the two countries, it is believed. April pig iron imports from British India dropped to 9798 tons. In the two preceding months, British Indian pig iron imports had averaged about 15,000 tons each.

The customs division of the treasury department, with its agents in Berlin, has been working on the German countervailing question for some months. Complaints had been made against the competition of German steel in the domestic market by iron and steel producing interests in this country.

The treasury investigation showed that the Raw Steel syndicate, of Duesseldorf, has agreed with the Association of Iron Consuming Industries within the Association of Industries of the German Reich, in Charlottenburg, whereby the Iron Consuming Industries, or its member associations, issue certificates covering quantities of exported goods, these being used in part payment for reorders placed with the Raw Steel syndicate plants. The amount of credit on each certificate allowed is the difference between the inland price of the commodity and the "world export price."

The treasury accordingly has ordered suspension of liquidation of entries covering products affected imported or withdrawn from customs custody after 30 day following publication of the order. Products imported under benefit of the bounty must be held under bond pending final adjustment of the rate of the countervailing duty, which may not be done for some time.

In the meantime consular officers have been directed to require each invoice covering such merchandise from Germany to state whether it bears a benefit of the certificate bounty, and if so, the amount of bonus allowed. The consular officers also must attempt verification of the invoice statements wherever practicable.

Products affected include pig iron, ingots or blooms, billets, sheet bars, shapes, bar iron, universal shapes, band iron, wire, rails, gas tubes, steam tubular products, boiler plate and sheet iron.

Chamber Proposes New Tariff Board

Washington, May 25.—Flexible tariff duties in the future, under which rates on imported merchandise might be raised or lowered when found necessary because of costs of production, would be in the hands of a new tariff board created to fix rates, the board's decisions having the effect of law, according to the proposal submitted by the United States Chamber of Commerce today.

The position of the chamber, which speaks for more than 1400 national and local business organizations, is set forth in a statement calling attention to the present senate investigation of tariff administration. The chamber's plan would make of the present tariff commission a research body, solely to get information for congress for use in tariff questions. At present the tariff commission has before it the question of determining finally whether an increase of 50 per cent in the present duty on imported pig iron shall be recommended to the President.

"We are not in favor of multiplying the number of government boards, but we are in favor of separating bodies with quasijudicial functions from purely research organizations and from official bodies making official recommendations as to policy," says the chamber. "We believe in a separation of functions, especially in connection with quasijudicial functions bearing directly on commerce."

Concrete Awards Heavy

(*Concluded from Page* 1397)

N. J., to Igoe Bros.
152 tons, Camehaneha highway bridge, California, to unknown interest.
150 tons, arena, New Haven, Conn., to Truscon Steel Co.
125 tons, sewer, Philadelphia, to Davis Bros.
120 tons, addition to Emerman building, Chicago, to Inland Steel Co. Avery Brundage, 110 South Dearborn street, Chicago, general contractor.
100 tons, Feibleman building, Newark, N. J., to Igoe Bros.
100 tons, building for Creamery Package Co. at Chicago, to Calumet Steel Co.
100 tons, power house, Whippany, N. J., to Day & Goater.
100 tons, school for which Childs & Smith, 720 North Michigan avenue, Chicago, are architects, to Kalman Steel Co.

CONTRACTS PENDING

2500 tons, Willow sewage disposal plant, Cleveland; Mellon-Stuart Co., Pittsburgh, awarded general contract. Steel to be placed shortly.
1000 tons, Mid-Hudson bridge, Poughkeepsie, N. Y.; Blakesly Rolland Co., Boston, low bidder on general contract.
600 tons, apartment at Sheridan road and Grace street, Chicago; Robert S. DeGolyer & Co., 307 North Michigan avenue, Chicago, architect.
500 tons, Federal Cement Co. plant, Buffalo; E. P. Muntz contractor.
400 tons, warehouse for Sam Davis Co., Toledo, O.; bids in.
250 tons, building for Hookless Fastener Co., Meadville, Pa.; pending.
250 tons, Packard Motor Car Co. service station at New York; Turner Construction Co. awarded general contract.
250 tons, power house for the Duquesne Light Co., Pittsburgh; bids being asked.
220 tons, reinforcing for viaducts in the Seventy-ninth street causeway across Biscayne bay, Miami, Fla.; bids in June 15 by G. F. Holly, clerk of board, county commissioners.
100 tons, bridge, Ambler, Pa.; pending.
100 tons, school buildings at Pittsburgh and Oakdale, Pa.; bids being asked.
100 tons, Pennsylvania railroad bridge, New Brighton, Pa.; bids being asked.
Tonnage unstated, American Express Co. building, Long Island City, N. Y.; Turner Construction Co. awarded general contract.
Tonnage unstated, garage, Rochester, N. Y.; Turner Construction Co., general contractor.

Sheetmakers Discuss Stability

Executives at Fourth Annual Meeting Stress the Use of Trade Information and the Force of Business Development as Constructive Factors in the Industrial Situation—Reports of Various Sessions Are Presented

MANAGEMENT and not problems of distribution or reduction in manufacturing costs is the weak spot of business organizations Charles M. Schwab, chairman Bethlehem Steel Corp., told sheet steel executives at the conclusion of the first business session of their fourth annual meeting at Hotel Greenbrier, White Sulphur Springs, W. Va., May 17 to 20. He asserted that if captains of industry do not become more efficient, men in the ranks will be promoted and will right the situation. Buyers are not keen for lower prices, he stated, as long as their competitors do not receive a concession and you will obtain a relative percentage of business whether or not prices are cut. To prove his contention he cited the absence of price fluctuations in the rail market and the quantity of annual rail placements. The remedy for the present market situation, he insisted, lies in a better understanding of each other. He directed attention to the fact that production costs are nearly alike in all steel plants and that secrets of cost, selling prices, etc., no longer exist.

Mill location and freight rates are the important market factors today, he explained. Mr. Schwab directed attention to the fact that while only 6 per cent of the world's population is in the United States approximately 50 per cent of all manufacturing is credited to this country. In conclusion he predicted that in 20 years the national output of steel would be 100,000,000 tons annually.

Speaker Finds Romance Present in Business

FEATURING the first day's program of Sheet Steel Executives' fourth annual meeting at Hotel Greenbrier, White Sulphur Springs, W. Va. was the theme of market stability. Following the opening remarks by G. H. Charls, president, United Alloy Steel Corp., Canton, O., who presided over the first session, T. D. McCloskey, general counsel, National Association of Sheet & Tin Plate Manufacturers, Pittsburgh, spoke on the "Romance of Business." He outlined the development of the Harriman system, referred to the advantages to be derived from large cash reserves and alluded to the market struggles of 1900 which resulted in consolidations and mergers of many small plants. He maintained capital is the accumulated effort of labor and that business is service and the bigger the business the bigger the service.

Capital and labor are one, he continued, and what hurts labor hurts capital and what hurts capital hurts labor. The problem of labor is the greatest of all times, he contended, and he who solves this problem will write the romance of business forever.

W. S. Horner, president, National Association Sheet & Tin Plate Manufacturers spoke on the "Sheet Steel Industry." Mr. Horner's paper which was presented in part in the May 20 issue of IRON TRADE REVIEW, commanded prolonged applause and was made the basis of reference by many of the speakers. Mr. Charls in commenting on the address stamped it as epoch-making and stressed the importance of the statistics presented by Mr. Horner. Illness of C. E. Stuart, president, Central Steel Co., Massillon, O. prevented the presentation of a paper entitled "The Fraternity of Business."

In speaking on "Wastefulness and Extravagence of Industry" Severn P. Ker, president, Sharon Steel Hoop Co., directed attention to the fact that too much energy has been shown in improving plant equipment. It is his belief that improvements in methods are desirable. The duty of sheetmakers is to increase the quality of their product and decrease the cost to the consumer because in so doing they are serving both the public and the state. Moreover, he pointed out that when capacity is kept within the limits the management is serving stockholders to a greater extent. When we break into an industry that is overproduced by reason of too rapid expansion in building equipment, we not only injure our industry but do not give our stockholders an adequate return.

C. R. Hook, chairman Labor Committee, National Association of Sheet & Tin Plate Manufacturers, and vice president of the American Rolling Mill Co., spoke on "Some Labor Problems Confronting the Sheet Steel Industry Today" and handled the subject in a broad way. He emphasized that the greatest problem of sheet producers today is their sales department. And that the most stabilizing effect can be inaugurated by stabilizing selling prices. The first session was brought to a close by remarks of C. M. Schwab who dealt largely with problems of management. He pointed out that the lack of understanding largely is to blame for the present situation.

Henry A. Roemer, president, Superior Sheet Steel Co., Canton, O. presided at the second day's session and introduced C. L. Bailey, field representative, Sheet Steel Trade Extension Committee as the first speaker. After outlining his 20 years' experiences in the steel business, Mr. Bailey, in speaking on "Awakening Sheet Steel Consciousness in Tomorrow's Men" pointed out that the sheet metal contractor and the consuming public are the two groups to which a large part of the trade extension effort must be directed. If there exists, he continued, a sales resistance to sheet steel on the part of the contractor and the public then to overcome this it becomes neessary to determine the causes; to comprehend the viewpoints of those who underestimate the value of the product. and to intelligently approach the problms which must be overcome in order to enlist their co-operation in the promotion of the use of sheet steel.

The speaker directed attention to the fact that the sheet metal contractor not only does not understand and appreciate sheet steel but in many instances is indifferent if not antagonistic to its use. This attitude on the part of the contractor may be inflenced to some extent by the fact that on account of high labor costs, there has been a growing tendency on the part of consumers of

sheet metal roofing and other materials to eliminate the sheet metal contractor and construct these roofs with common or farm labor and since the contractor is denied the profit on his labor and there is a narrow margin of profit in the sale of the material, he has become antagonistic to the product itself.

Moreover, manufacturers of prepared roofing not only have made a wide direct appeal through advertising and other forms of publicity to the consumer, but there is a wider margin of profit in the sale of prepared roofings than in the sale of steel roofs. If we are to restore sheet steel to public confidence and increase the market for this material, the speaker contended, we must educate the sheet metal contractor. This can be done by teaching him to help himself and we can most effectively excite his interest by showing him how he can conduct his business on a more profitable basis. One of the methods of assistance, the speaker said, is to prepare for him a simple method of bookkeeping and cost accounting so that he can determine his costs accurately; and to encourage him to join local and state associations of men engaged in the same business as himself. At this point the speaker cited the plumbing trade as comparable to the conditions confronting the sheet metal trade.

If we are successful in creating a larger demand for sheet steel and if we are to avoid smothering that demand in its infancy by increasing labor costs due to scarcity of men to perform this increased work, we must give some consideration to the development of men to do the work required, the speaker contended. He directed attention to the fact that the skilled craftsmen of a generation ago are dying off and of the direct relation between the death rate of these skilled mechanics and the rate of decrease of the number of available men. Immigration no longer supplies enough replacements in the ranks of mechanics to meet the demand.

That iron and steel is crossing the pathway of home building was the contention of Bennett Chapple, publicity manager. American Rolling Mill Co., after outlining the conditions under which houses were built of wood several years ago, directed attention to the fact that the efficiency in the steel industry is helping to furnish materials cheaper than lumber. Fire and lightening loss is reduced by employing steel for building purposes, said the speaker. The attitude of the builder and the architect are important. He said that everywhere eagerness is found to accept these steel homes. Architects are ready to apply their artistic ability to building houses of steel if suitable material can be supplied. The speaker pointed out that metal houses will be along the lines of personal enterprise. Real estate boards in different parts of the country feel that it is up to the steel industry to furnish steel shapes at less cost and shapes suitable for shipment. The idea of steel homes and the opportunities it offers is of importance to the sheet steel manufacturers and in closing he urged all producers to get shoulder to shoulder on the movement. During the convention, a model home constructed entirely of steel was on display in the fountain room of the hotel, through the courtesy of C. H. Dexheimer & Son, Toledo, O.

That emotions rule the public as they rule the individual was the contention of J. J. Rockwell, vice president, Crosby-Chicago who presented a paper on "Creating a Sheet Steel Minded Public". One of the strongest of human emotions is fear and one of the strongest appeals is that of preservation of self and property from possible injury or loss, he stated. Observe in our advertising how forcibly and frequently safety from fire has been stressed as one of the outstanding advantages to be gained from the use of sheet steel in many forms of application.

Contrary to a frequently expressed opinion there is nothing weak or ignoble in the appeal or the yielding to this dominance of the emotions over the intellect. Honest sentiment, emotion and intuition often are truer guides than cold reason or logic, the speaker said. It is the province of advertising to seek out leaders in communities, arouse their emotions, fire their imaginations and thus fire into action that most powerful of all forces of education and propaganda, namely, word of mouth advertising. That is the way the public mind is made for any product and that is the way it is being made for sheet steel. Moreover, that is one reason why capturing the public mind for a commodity and engendering complete confidence in and enthusiasm for results takes time.

Mr. Rockwell in the course of his remarks called attention to a section of the public composed of fabricators, jobbers, sheet metal contractors and dealers that has a function far transcending in importance, namely, its buying power for its own consumption. There is constantly increasing evidence that fabricators and their associations are appreciative of and are responding to the stimulus of our promotion campaign and to a considerable extent are co-operating with and taking advantage of it. Jobbers and sheet metal contractors, however, seem to develop little enthusiasm, he pointed out. In conclusion he said if an organized and protected method of marketing through the jobbers could be developed it would be helpful.

Deems Distribution Most Important Problem

THE most important problem facing the sheet steel industry today is that of distribution according to L. F. Miller, general manager of sales, National Enameling & Stamping Co., Granite City, Ill., who spoke on "The Need for and Value of Co-operation in Trade Extension Effort." He expressed the view that there is a new kind of competition abroad today, affecting all lines of goods and working radical changes in sales policies. He alluded to this competition as having led to extensive price-cutting among people in the same industry and of being at the bottom of installment buying. He predicted that if sheetmakers can convince the public that master brand sheets are better than prepared roofing or tile, that much steel will be taken out of the market and it will be easier for the mill catering to the automobile trade to sell its output. If galvanized makers are assisted in making their product secure on the market it will keep their mills out of the high-finished market and relieve manufacturers from that much internal competition.

All factors indicate marvelous times ahead according to C. C. Parlin, director research, Curtis Publishing Co., Philadelphia. The steel industry has never been an advertising industry, the speaker pointed out, because it started before advertising became successful. In closing Mr. Parlin predicted that the steel industry is on the threshhold of tremendous advertising campaigns.

While the master brand still is in its infancy the movement is the first to be undertaken by the majority of galvanized sheetmakers Walter C. Carroll, vice president, Inland Steel Co. stated at the final session over which Walter E. Watson, vice presi-

dent, Youngstown Sheet & Tube Co. presided. Specifications, which control the manufacture, materially affect the cost of production, he pointed out. It is difficult for any mill to live up to the specification of master brand sheets without absorbing, by reason of increased cost, practically the entire extra of $5 a ton. Therefore, he stated, if the master brand is quoted at an advance per 100 pounds of 25 cents over commercial galvanized stock it is not a money-making scheme. If the base is of copper alloy quality, the long established extra of 15 cents making the total extra 40 cents a hundred pounds, does not increase materially the profit of the manufacturer.

He explained the field of usefulness of master brand galvanized sheets is limited because the spelter coating is too heavy to withstand severe or rapid machine operations. It is impossible to cover the entire range of purposes for which galvanized sheets can be used with one quality or one weight of coating for any particular gage. Four grades of galvanized, however, are important. They are:

In the first class are those to be used for flat work or to be corrugated only.

In the second class are those to be corrugated and subsequently formed in curved rolls such as culvert stock.

In the third class are those for general forming work such as for cornices, ventilating systems, etc.

In the fourth class are those which must be drawn in dies or formed by high-speed machine operations such as window frames, sash, conductor pipe, corner bead, etc.

Master brand coating will answer satisfactorily the less severe requirements under class 3. In many instances it will be more satisfactory for work under class 2 than heavier coatings frequently specified. With the exception of unusual atmospheric conditions master brand sheets should give an excellent account of themselves under class 1. They should not be sold for purposes included in class 4 where the sheets must carry an extremely light and tight coating.

Success of the advertising programs of numerous associations was dealt with at length by J. L. Grimes, advertising manager, Wheeling Steel Corp. in speaking on "The Trade Extension Program from the Member's Standpoint." The experiences of the associations mentioned are sufficient to show us how unlimited are our possibilities, he stated. Not enough information about the promotion campaign has been put before our salesmen, he contended, who represent an army of merchandisers and we are not using them to the extent that is possible to bring back to us the real results from our campaign.

In speaking on "Some Aspects of Market Stability", C. O. Hadly, vice president, Alan Wood Iron & Steel Co., Philadelphia outlined in the early part of his paper the unprecendented accomplishments in production and marketing and the startling changes that have occurred both in national life and in business problems during the past 25 years.

In directing attention to the elimination of waste in production as affecting cost the speaker stated that too frequently the expenditures necessary to produce articles to given specifications have not been recovered in the selling price which has the same adverse effect on profit as would result from waste in production of sheet steel.

It is easy to say "When we stop putting a premium on over production and keep a firm hand on cost and price relationships" but are we nearer to or farther from any real accomplishment? When rivalry for tonnage precedence continues to invite reprisals, who is responsible for such "raw" market reports as have appeared in some of the trade papers within the past month and which have caused a local snowball to gather size and momentum until it threatened to become an avalanche to roll down the mountain side and crash through to widespread devastation and havoc.

Building Codes Little Aid to Sheetmakers

IN speaking on the "Relation of City Building Codes to Sheet Steel Demand", G. L. Bennett, director building trade extension, Sheet Steel Trade Extension Committee, made it plain that sheet steel or any article made of it seldom is prescribed definitely by any building code without substitutes being permitted because there are few purposes in the construction of a building which can be served by sheet steel exclusively. The only substitutes permitted in some cases are so costly compared with sheet steel as to tend to give it a preference. The choice generally is left to the builder or his architect.

The speaker asserted that the building code seldom is more than one of the factors which decide whether sheet steel shall or shall not be purchased for any particular building use. Other large factors are the salesmanship of the sheet metal contractors seeking this work, the general regard in which sheet steel is held by that community and the relative merits of the competing materials. Good salesmanship and general regard can overcome much of disparity in price that if the merit of sheet steel actually or nearly entitles it to be chosen they will win the decision.

The local building code rests upon a somewhat scientific basis of facts as interpreted by building authorities and upon local public wishes. In the speaker's opinion the biggest factors in the relation of the building code of any city to sheet steel demand is the healthy condition of the local sheet metal trade and the scientific data used by the local authorities as a basis of their code. The building code, he stated, is largely a barometer of local trade conditions. It is evident, he declared, that only to a limited extent would it be possible to make building codes favorable without working the sheet metal trade and without its aggressive co-operation, sheet steel demand will not result satisfactorily from favorable codes. After describing the activities of the building trade extension division during the past year and of its participation in various fire tests on roofings and garages and in prosecution of code changes in four cities the speaker closed by emphasizing the importance to demand for sheet steel in the provisions of the building code of any city; that this code reflects both the current practices of the country, the ideas of the local public officials and the trade development ideas of the sheet metal contractor; that the existence of unfavorable provisions in a building code is proof of a disorganized condition among these contractors; and that favorable code provisions cannot be turned into sheet steel orders without a healthy aggressive condition.

Price policy based on production rather than on volume has contributed to the growth of the steel industry asserted Murray Springer, general director, operating branch, Sheet Steel Trade Extension Committee. Many of us have been confronted with muddy thinking about promotion work. He cited that a change in the buying habit of the nation is going forth steadily. In 1925 the income of the mills which produced sheets was $20,000,000 larger than in 1924. He warned those in attendance that the changes which have occurred in in-

dustry during the past year have wiped out old compass marks and that methods of selling courses will have to be revised.

Participation in trade extension work is going to happen when you take the 50 per cent of your sales organization ability and put it to work. The small fabricator of today through the co-operation of the trade extension plan will become the large fabricator tomorrow, Mr. Springer said, and your salesmen should go after the small business instead of large accounts. If sales members of every company uses the sales campaign then its power will begin to build business.

The final session was brought to a close by remarks of C. O. Hadly, vice president, Alan Wood Iron & Steel Co. who voiced appreciation for the work performed by those who arranged and took part in the program and in making it a succecss. A complimentary dinner preceded the three-day session. Entertainment for the ladies in attendance at the meeting including bridge parties, afternoon teas and golf.

Conference Board's Service Reviewed

TEN years of remarkable service to American industry were commemorated at the annual meeting of the National Industrial Conference board, Inc., at Hotel Astor, New York, May 20. The event was notable not only for the opportunity given to review the work of the board but for the high tributes paid to Frederick P. Fish, who is retiring to the position of honorary chairman after having served as active chairman for 10 years with unusual distinction.

The opening session was held Thursday morning following a meeting of the executive committee, which now consists of the members named in the accompanying list. Reports of the officers were presented, including that of Magnus W. Alexander, president, who outlined the recent work of the board and explained the application of its information service to the requirements of industry.

Following a complimentary luncheon attended by several hundred representatives of the 31 organizations affiliated with the board, Frederick P. Fish, Fish, Richardson & Neave, Boston, delivered an address "After Ten Years," which was in effect a valedictory message on his retirement from the active chairmanship. Mr. Fish reviewed the early aims of the board, its constant effort to serve industry, and the results it has been able to achieve. The afternoon session also was devoted to a discussion of the significance of agriculture in the national economy.

Commends Chairman's Work

Loyall A. Osborne, president, Westinghouse Electric International Co., New York, presided at the banquet in the evening. He introduced William B. Nichols, chairman, Allied Chemical & Dye Corp., New York, who acted as toastmaster. Charles Cheney, president, Cheney Bros., South Manchester, Conn., presented the executive committee's resolutions commending the work of Mr. Fish as the board's first chairman, to which Mr. Fish responded with a brief statement of the wonderful opportunities still open to the board.

Owen D. Young, chairman, General Electric Co., spoke on the subject, "What Kind of Industry Should We Build?" He cited statistics on wages, number of persons employed in industry and on production to show the great improvement in industrial efficiency from 1914 to 1923. He recalled the time when the term "living wage" was being discussed by economists and declared that the attention of industrial leaders should be directed toward a "cultural wage," one that would permit all workers to enjoy more of the good things of life. "When that time comes," he said, "all men will be free and equal in opportunity, but not necessarily in capacity." Mr. Young explained that this does not mean that industry will become less profitable.

Turning to the subject of profits, Mr. Young advocated a change in the attitude of government to business. He pointed to the fact that now governmental investigations are largely confined to businesses that have made large profits. Presumably profits are based on service and if this is true, he said, it follows that the company that is not making profits is not rendering service.

"Why, then," he asked, "should these unprofitable concerns be permitted to use labor, which is none too plentiful, and capital, which is not easy to obtain, for unprofitable purposes?" From this reasoning he concluded that the government should change its policy and should go after those who are wasting the country's labor and capital instead of investigating those who are using these resources to profitable advantage.

Magnus W. Alexander read letters from Secretaries Mellon, Hoover and James J. Davis and from numerous industrial leaders of England, France, Germany, Italy and Sweden commending the work of the board.

Conference Board's Officers, 1926-27

Honorary Chairman
FREDERICK P. FISH
Fish, Richardson & Neave, Boston

Chairman
LOYALL A. OSBORNE
President, Westinghouse Electric International Co., New York

Vice Chairman
CHARLES CHENEY
President, Cheney Brothers, South Manchester, Conn.

Vice Chairman
JOHN W. O'LEARY
President, Arthur J. O'Leary & Sons, Chicago

President
MAGNUS W. ALEXANDER
247 Park Avenue, New York

Treasurer
FRED I. KENT
Vice President, Bankers Trust Co., New York

Secretary
JAMES M. ROBERTSON
247 Park Avenue, New York

Executive Committee
WILLIAM W. COLEMAN
President, Bucyrus Co., South Milwaukee, Wis.
IRENEE DU PONT
Chairman, Finance Committee, E. I. du Pont de Nemours & Co., Wilmington, Del.
RUSSELL H. LEONARD
Treasurer, Ipswich Mills, Boston
WILLIAM H. NICHOLS JR.
President, General Chemical Co., New York

Start Cement Plant Soon

Chicago, May 25.—Work is to be started this summer on the new Cleveland plant of the Universal Portland Cement Co., a subsidiary of the United States Steel Corp. Plans for the development have been practically completed and clay acreage in the Cuyahoga river valley south of Cleveland acquired. The plant will have an annual capacity of 1,500,000 barrels and give the Universal company a combined annual capacity of 18,000,000 barrels. The Cleveland plant will be in the upper Cuyahoga valley, permitting the receipt of limestone by boat from Rogers City, Mich., and the shipment of cement to lower lake cities. Connection with the Newburg & South Shore railroad will enable the plant to obtain slag in Cleveland.

Steel Treaters Meet In East

Hartford Chapter Is Host to Spring Sectional Meeting of American Society for Steel Treating—Technical Sessions, Plant Visitation and Banquet Constitute Program—Many Members Attend

MORE than 380 members of the American Society for Steel Treating met in Hartford, Conn., May 20-21 to attend the spring sectional meeting of the society. This registration was the largest for any sectional meeting and, in addition, the out-of-town enrollment was a record. The program consisted of several technical sessions, plant visitations and a banquet.

At a meeting of the board of directors, with all members present, Detroit was chosen as the 1927 convention and exposition city. Convention hall, with 166,000 square feet of floor space, will be the headquarters and the week of Sept. 19 probably will be the date selected. Philadelphia was preferred as the convention city, but was not chosen because the American Foundrymen's association has expressed its intention of meeting there next year. Formerly national conventions have been directed by a committee selected from the local chapter in the convention city, but this year the work will be handled by the national office, with the executive board of the local chapter serving in an advisory capacity. To assist in this work, the board authorized the employment of an assistant secretary for the national office.

Selection of Washington for the winter sectional meeting in January, 1927 was announced. Because of a demand for increased activities, the society has decided to extend its work in connection with nonferrous metals. This step was taken after consulting with the Institute of Metals which gave full approval to the program and pledged its co-operation.

Tests Low Carbon Steel Cutting

THE steel treater takes his place beside the rolling engineer as a producer in the steel industry, according to F. G. Hughes, vice president, New Departure Mfg. Co., Bristol, Conn., one of the speakers at last week's meeting. Nearly 300 members of the society were present to hear the address of welcome by Mayor Stevens of Hartford at the opening session on Thursday. An interesting feature of the meeting was the presence of two past presidents of the society in addition to the present president, R. M. Bird of Philadelphia, and all other national officers.

Deep cuts with fine feeds are preferable to shallow cuts with coarse feeds in machining of low carbon steels according to J. S. Vanick, who presented a joint paper prepared by himself and T. H. Wickenden, both of the research department, International Nickel Co., New York. This paper described in considerable detail a series of machine tests made to determine the requirements for smooth surfaces. For uniformity the tests were conducted with a ¼-inch wide round-nosed tool shaped as recommended in Taylor's original work on the subject. A series of cuts ranging from 0.015-inch to 0.090-inch in depth and from 0.015-inch to 0.060-inch in feed was studied.

The speed of the cup was varied by the circular disk method starting the tool on its cut at the periphery and with a fixed number of revolutions a minute moving it inward, thereby obtaining a gradual speed reduction. A practical indication of the proper speed for a good high speed finish is the appearance of a hot temper colored chip. For efficient cutting speeds a steel hardness is preferably under 200 brinell. The investigation showed that rough cutting is usually the result of a critical speed which can be corrected in one of the following ways: 1. By lowering or increasing the speed; 2. by changing the depth of cut and feed relation; 3. by heat treating the material to a higher hardness; and 4. by changing the angle of the tool.

Turns to Old Steel

The rapid growth in the die block industry was brought out in a paper by A. J. Porter Jr., Heppenstall Forge Co., Bridgeport, Conn. According to this paper, die work at present has a wide range of application from a scissor forging of a few ounces, for instance, to the rear axle housings of an automobile truck weighing several hundred pounds. In developing dies for the large work it was found impossible to use tool steel and to overcome it die blocks were made of medium carbon steel which were successful some years ago when service demands were less severe. Today, intricate dies and rapid production are the rule, and the answer has been the alloy oil hardening blocks. This is a block adapted for either the simplest or the most intricate work, and if it is properly heat treated will withstand long runs before breakdown occurs.

The general characteristics of so-called stainless iron consisting of low carbon chromium-iron alloys were described in detail in a paper presented by N. L. Mochel, metallurgical engineer, Westinghouse Electric & Mfg. Co., Philadelphia. This iron tends to spread more than ordinary steel in the process of hot rolling with the result that rolls are over-filled and fins formed. The difficulty is overcome frequently by change in design. In general, stainless iron alloys may be cold rolled or cold worked without difficulty. It is necessary, however, to have more frequent annealing than in the case of soft carbon steel.

The characteristics of rustless iron of the high chromium type were covered in an illustrated paper by Marcus A. Grossmann, United Alloy Steel Co., Canton, O. Among other things Mr. Grossmann's investigation showed that the mechanical properties remained substantially the same for different heating temperatures up to 1800 degrees Fahr., at which point a new set of mechanical properties is reached. This new set, however, does not change greatly with further rise in quenching temperature.

Other papers presented at the meeting included "Recrystallization Temperatures of Cold-Rolled Electrolytic Iron and Open-Hearth Steel Strip," by John R. Freeman Jr., read by H. S. Rawdon, bureau of standards, Washington, and "Forging By the Upset

Process", by J. C. Kielman, New Departure Mfg. Co., Bristol, Conn.

The Hartford chapter of the society, which acted as hosts for the spring meeting had a full program arranged, including visits to nine of the large manufacturing plants in and around Hartford. At the banquet in the Hotel Bond ballroom Thursday evening Samuel M. Stone, president, Colt's Patent Fire Arms Mfg. Co., was toastmaster and Edwin P. Root, president, New Haven Clock Co., spoke on invention and immigration.

At the regular meeting of the national board of directors held on Wednesday, the day preceding the opening of the technical sessions, numerous matters of society business were conducted. W. H. Eisenman, national secretary, reported that the 40,000 square feet available for the machine tool section of the Chicago exposition in September is sold out and a waiting list is on file. In the steel section, also comprising 40,000 square feet, 15 sections are unsold. This exhibition will require 6000 horsepower for operation, against about 2000 for the Cleveland show with about half the floor space.

One of the exhibits at the Chicago show will be an educational display arranged under the direction of various standing committees of the society. Data sheets and recommended practice will compose part of the exhibit. Plans are being made for a metallurgical education luncheon at the September convention. Metallurgical education in universities and technical schools and metallurgical education as a chapter activity will be discussed at that time.

Groups Are Organized

The board of directors passed a resolution authorizing the formation of groups in industrial centers where there are insufficient members to constitute a chapter. The "group," similar to the "chapter," is responsible to the national society but is required to hold no definite number of meetings during the year. Group charters were granted to Ft. Wayne and Montreal. The directors also ratified a student group at Case School of Applied Science under the sponsorship of the Cleveland chapter. In order that the railroads might have representation on the recommended practice committee, this committee was enlarged by the appointment of James H. Gibboney, chief chemist, Norfolk & Western railroad as a member. Mr. Gibboney at present is vice president of the American Society for Testing Materials. R. B. Shenck, Buick Motor Car Co., Detroit, resigned from the recommended practice committee and H. M. Northrup, Hudson Motor Car Co., Detroit, was appointed to fill the vacancy.

Recalls History of Ohio Pig Iron Making

(*Concluded from Page* 1366)

and afterward a partner in Hickman, Williams & Co. Another graduate of the Mack firm was Charles G. Blake until lately in the coal business in Cincinnati. Louis Walter and Buckner Wallingford succeeded to Thomas A. Mack's business. Louis Walter died recently.

Returning to the firm of Matthew Addy & Co., this firm first was composed of Matthew Addy, H. M. Warren and C. H. Domhoff. These were the members of the firm when the writer went to work for them in October, 1882.

H. M. Warren withdrew in 1885 and associated himself with Lester A. Wood in the firm of Warren, Wood & Co., New York. This firm was successful, but was dissolved by the death of Lester Wood. Mr. Warren for a while was associated with Justice Cox in Philadelphia.

Mr. Addy and Mr. Domhoff remained as partners until 1894 when Mr. Domhoff withdrew. Mr. Addy then admitted as partners. T. J. Joyce, James A. Green, Edwin McFarland, William W. Hearne and William L. Turner.

This group remained together until the spring of 1896 when T. J. Joyce withdrew and associated himself with C. H. Domhoff and John Sargeant, who had been traffic manager for Matthew Addy & Co. forming the firm of Domhoff, Joyce & Co. Mr. Domhoff and Mr. Sargeant are dead. Mr. Joyce retired from business some years ago. The firm is now the Domhoff-Joyce Co. Inc.

Matthew Addy died in August, 1896, and it was found that by his will he had arranged that the remaining partners, Messrs. Green, McFarland, Hearne and Turner, with Mrs. Addy as a special partner, were to continue the business.

Mr. Addy had great confidence in Mr. Green so he arranged that Mr. Green should be the head of the business and Mr. McFarland should have charge of finances. Mr. Hearne was to confine his energy to selling, which he has done up to the present time.

The year 1896 marked the end of "the panic of 1893." Pig iron, steel and everything that went into the iron and steel business was on the lowest level. Labor in Alabama and Virginia was plentiful at 85 cents per day of 12 hours, and pig iron sold at $6 per ton and lower, in Birmingham, and at $9 in Philadelphia. Nobody made any money but the low prices encouraged consumers of iron and steel to expand the use of these metals and by the end of 1897 there was an improvement in the demand and in prices. The result was a great increase in business. The commission or agency houses began to open branch offices in various cities and for a while every one prospered and made money.

Iron Shipped To North

The backbone of the commission business was the large output of iron in Tennessee, Alabama and Georgia. Practically all of this iron had to be sold north of the Ohio and Potomac rivers, in the older and better developed manufacturing sections of the country.

Slowly but surely the South developed, and users of pig iron were attracted, until at present practically all the iron made in Alabama and Tennessee is used locally. In fact the demand for pig iron in the Birmingham district has become so great that instead of the district being one of the cheapest markets in the country, it has become one of the highest, and iron is cheaper at Philadelphia than at Birmingham.

(*To Be Continued*)

Convention Calendar

June 1—Eastern States Blast Furnace and Coke Oven association. Annual meeting at Edgewood Country club, Pittsburgh. C. R. Meissner, box 1511, Weirton, W. Va., is secretary.

June 1-4—Society of Automotive Engineers. Summer meeting at French Lick Springs, Ind. Coker F. Clarkson, 29 West Thirty-ninth street, New York, secretary.

June 7-10—Association of Iron and Steel Electrical Engineers. Twenty-second annual convention and exposition at Hotel Sherman, Chicago. John F. Kelly, 513 Empire building, Pittsburgh, secretary.

June 9-12—National Association of Purchasing Agents. Eleventh annual convention and exposition, Ambassador hotel and auditorium, Los Angeles. W. L. Chandler, Woolworth building, New York, secretary.

June 16-18—Society of Industrial Engineers. Thirteenth national convention, Bellevue-Stratford hotel, Philadelphia. George C. Dent, 608 South Dearborn street, Chicago, executive secretary.

June 21-25—American Institute of Electrical Engineers. Annual convention at White Sulphur Springs, W. Va. F. L. Hutchison, 29 West Thirty-ninth street, New York, secretary.

June 21-25—American Society for Testing Materials. Annual convention at Chalfonte Haddon hall, Atlantic City, N. J. C. L. Warwick, 1315 Spruce street, Philadelphia, secretary.

June 22—Foundry Equipment Manufacturers association. Regular quarterly meeting, Cleveland hotel, Cleveland. H. Cole Estep, 1213 West Third street, Cleveland, secretary-treasurer.

June 28-July 1—American Society of Mechanical Engineers. Spring-summer convention at Palace hotel, San Francisco. Calvin W. Rice, 29 West Thirty-ninth street, New York, secretary.

British Furnaces Continue Idle

Majority of Stacks and Steelworks Closed—Fabricators Active in Buying—Prices Gaining Strength—French Mills Booked Three to Four Months—Slump in Belgian Market

2-3 Caxton House, Westminster, S. W.1
European Headquarters,
IRON TRADE REVIEW,

LONDON, May 25.—(*By Cable*)—The majority of British blast furnaces and steelworks remain closed, due to the coal strike and continued deadlock between miners and operators. Rerolling mills, engineering works and foundries are operating at various rates, according to their stocks of fuel. Fabricating industries are actively buying iron and steel from domestic and continental sources. Prices of British coke, iron and steel are hardening.

The coal strike remains a thorn in the side of British industry. The miners though suffering from lack of funds and seeking to keep their forces together by establishing soup kitchens refuse to recede from their position on the question of wages and hours. The owners are firm for a reduction of 10 per cent in wages and eight hours work per day. They deprecate outside interference, and give indications that negotiations presently will be ended.

The report of British iron and steel exports and imports for April issued today shows exports of 313,045 tons, compared with 406,547 in March and 339,474 in February. Imports in April totaled 261,787 tons, compared with 258,526 in March and 228,538 in February.

Reports from France state home and export business has improved. Mills are booked three to four months ahead. A slump in the Belgian market is reported. German exports are increasing, but prices are unremunerative due to competition from France, Belgium and the Saar. German producers, however, offer earlier deliveries.

German Steel Trust Is Completed

BERLIN, May 11.—(*European Staff Service*)—The new German iron and steel *trust called* the Vereinigte Stahlwer*ke A. G.* is now completed. The share capital of the company is 800,000,000 marks ($190,000,000). It controls about half the Rhenanian-Westphalian coal, iron and steel output. Its members are the Deutsch-Luxemburg Mining Co., the Gelsenkirchen Mining Co., the Bochumer Union, the Thyssen combined, the the Phoenix Mining Co., the Van der Zippen & Wissen Co. and the Rhenanian Steelworks Co. According to the provisions of the trust, this organization is negotiating for a loan of about $40,000,000 to $60,000,000 in the United States. The financial needs of other German metallurgical concerns are also great, as may be seen from the fact that the Kloeckner Mining Co. recently issued a loan which totaled 33,000,000 marks ($7,000,000).

Recent news regarding export trade in Germany is not altogether satisfactory as prices had to be reduced to meet sharp French and Belgian competition. However, some bookings of foreign orders have been made. South America and British India have shown interest in bars. Inquiries for shapes have also been received. Plates suffer from competition of western producers while light gage sheets are very depressed. Wire rod sales have not revived while sales of wire and wire nails are reduced owing to competition of Belgian producers. Foreign sales of galvanized wire products are maintained satisfactorily. Fair orders from India and China have been booked for pipes. In March 22,566 tons of pig iron have been shipped to the United States, but now sales are handicapped by the French competition. About 100,000 tons of Wabana ore for shipment during this season have been purchased

(*Concluded on Page* 1420)

Current Iron and Steel Prices of Europe

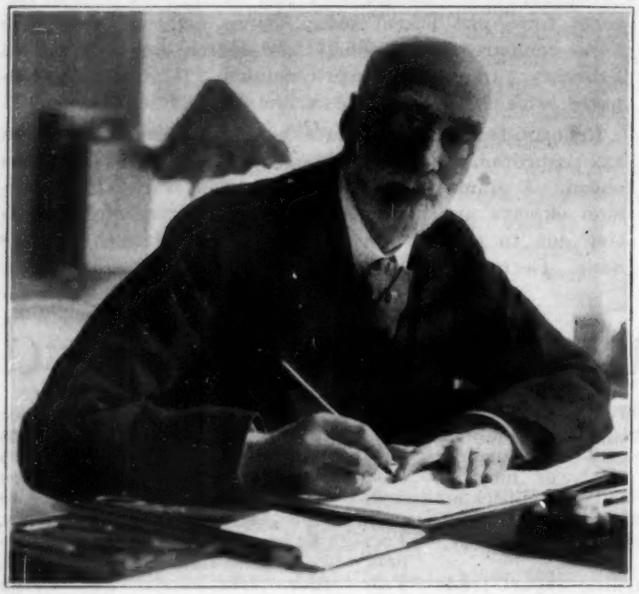
Dollars at Rates of Exchange, May 24	*British* Gross Tons U. K. Ports		*French* Metric Tons Channe lPorts		*Belgium and Luxemburg* Metric Tons Channel Ports		*German* Metric Tons Rotterdam or North Sea Port	
Export Prices f. o. b. Ship at Port of Dispatch—By Cable								
PIG IRON	£ s d		Francs		Francs		£ s d	
Foundry No. 3, Silicon 2.50-3.00	$17.65	3 12 6*	$17.81	530	$17.44	530	$17.53	3 12 0
Basic	17.17	3 10 6	17.81	530	17.44	530	17.05	3 10 0
Basic-bessemer	19.11	3 18 6†	15.62	465	15.30	465	18.26	3 15 0
Hematite, Phosphorus 0.02-0.05	20.58	4 4 6	19.15	570	.....	...	20.80	4 5 0
SEMIFINISHED STEEL								
Billets	$27.29	5 12 6	$22.18	660	$21.71	660	$20.94	4 6 0
Wire rods	43.83	9 0 0	28.39	845	27.80	845	27.27	5 12 0
FINISHED STEEL								
Standard rails	$35.31	7 5 0	$32.26	960	$31.58	960	$29.22	6 0 0
Merchant bars	1.49c	6 17 6	1.15c	760	1.13c	760	1.08c	4 18 0
Structural shapes	1.36c	6 5 0	1.12c	740	1.10c	740	1.07c	4 17 0
Plates, ship, bridge and tank	1.41c	6 10 0	1.22c	800	1.19c	800	1.18c	5 7 0
Sheets, black, 24 gage	2.23c	10 5 0	2.22c	1,460	2.18c	1,460	2.32c	11 0 0
Sheets, galvanized, 24 gage, corrugated	3.42c	15 15 0	3.19c	2,100	3.58c	2,400	3.63c	16 10 0
Bands and strips	2.17c	10 0 0	1.41c	925	1.49c	1,000	1.49c	6 15 0
Plain wire, base	2.12c	9 15 0	1.82c	1,200	1.71c	1,150	1.51c	6 17 0
Galvanized wire, base	2.77c	12 15 0	2.47c	1,625	2.09c	1,400	1.98c	9 0 0
Wire nails, base	2.07c	9 10 0	2.16c	1,420	1.79c	1,200	1.76c	8 0 0
Tin plate, base box 108 pounds	$ 4.81	0 19 9	.....	...	.....	...	$ 6.57	1 7 0
Domestic Prices at Works or Furnace—Last Reported								Marks
Foundry No. 3 Pig Iron, Silicon 2.50—3.00	$17.05	3 10 0	$14.11	420(2)	$13.98	425	$19.55	85
Basic pig iron	16.56	3 8 0	13.78	410(1)	13.82	420	20.24	88
Furnace coke	3.65	0 15 0	5.17	154	4.44	135	4.95	21.50
Billets	27.39	5 12 6	20.16	600	20.23	615	27.37	119
Standard rails	1.63c	7 10 0	1.09c	720	1.00c	670	1.46c	140
Merchant bars	1.58c	7 5 0	1.10c	725	1.00c	645	1.46c	140
Shapes	1.47c	6 15 0	1.04c	685	1.00c	625	1.42c	136
Plates, ship, bridge and tank	1.55c	7 2 6	1.19c	780	1.00c	670	1.60c	153
Sheets, black, 24 gage	2.28c	10 10 0	2.08c	1,370	1.75c	1,175	2.29c	220
Sheets, galvanized 24 gage, corrugated	3.32c	15 5 0	3.12c	2,050	3.61c	2,425	3.96c	380
Plain wire	2.12c	9 15 0	1.82c	1,200	1.42c	950	1.85c	177
Bands and Strips	2.28c	10 10 0	1.38c	910	1.27c	850	1.62c	155

*Middlesbrough; †Scotch foundry iron; (1) Basic-bessemer; (2) Longwy. British export furnace coke £0 17s 6d ($4.26) f. o. b. Ferromanganese £14 10s 0d ($70.62) f. o. b. German ferromanganese £12 0s 0d ($58.44) f. o. b.

The equivalent prices in American currency are in dollars per ton for pig iron, coke, semi-finished steel and rails; finished steel is quoted in cents per pound and tin plate in dollars per box. British quotations are for basic open-hearth steel; French, Belgian, Luxemburg, and German are for basic-bessemer steel.

Industrial Men in the Day's News

Sir Hugh Bell, Awarded Bessemer Gold Medal



TO THE "Grand old man" of the iron and steel industry of Great Britain has come added recognition and honor.

IDENTIFIED with many business organizations he has gained international prominence as an industrial leader.

HE IS an author of considerable note and has contributed numerous books to the literature on economics and similar subjects.

TO THE "'grand old man" of the British iron and steel industry has come another honor and distinction. The bessemer gold medal was awarded to Sir Hugh Bell, Bart., at the annual meeting May 6 of the Iron and Steel institute, England. A contemporary of Andrew Carnegie, Henry Frick and other pioneers in development of the American iron and steel industry, Sir Hugh has arisen to a position of unusual prominence. He is one of the few remaining steelmasters who has taken a leading part in the development of that industry in the Middlesbrough district, one of the largest pig iron and heavy steel exporting centers of the world.

He is noted for his Victorian views on tariff, being a vigorous free trader. Although in an isolated position on the tariff as far as other steelmasters are concerned, he has taken an active part in tariff controversies, and has been an important factor in maintenance of free trade by England.

In addition to his semipolitical activities in opposition to the tariff, he has contributed considerably to economic literature, a few of his works being "Trade After the War", "The Position of Capital After the War", "High Wages; Their Cause and Effect", "The Railways and the State", "Rights and Responsibilities of Capital", and "The Effect of Nationalization of Coal Mines."

During the war he held important commissions in control of the industry. He was a member also of a special committee that was commissioned to study the reconstruction of the British iron and steel industry. This committee handed down a voluminous report. Protection was suggested unanimously except for Sir Hugh who wrote a minority report favoring free trade.

Sir Hugh is a true type of the cultured Englishman. He is of an imposing and dignified figure, and courteous and considerate. Sir Hugh was born at Walker-on-Tyne, England. His father started the Clarence Ironworks, having been formerly the manager of Walker Ironworks. In 1872 the Clarence interest was made Bell Bros. Ltd., and in 1899 the business was floated as an open stock proposition with Dorman, Long & Co. Ltd. Later the ordinary share capital of Bell Bros. was owned by Dorman, Long & Co., Ltd., which subsequently acquired the North Eastern steelworks. At his father's death in 1904, Sir Hugh became chairman of Bell Bros. Ltd.

Sir Hugh was a former president of the Iron and Steel institute, was an original member of the Industrial council for the settlement of labor disputes, and at present is chairman of the statistical committee of the National Federation of Iron and Steel Manufacturers. He has been unusually active in social as well as industrial and public life, and belongs to various social organizations.

Among the industrial companies with which he is connected are, Horden Collieries Ltd., of which he is chairman; the Channel Steel Co. Ltd.; Bell Bros. Ltd., of which he is chairman and managing director; Slag Power Ltd., of which he is chairman; and director of Brunner, Mond & Co. Ltd.; Dorman, Long & Co. Ltd.; Yorkshire Insurance Co. Ltd.; North Eastern Steel Co. Ltd.; Sir B. Samuelson & Co. Ltd.; Synthetic Ammonia & Nitrates Ltd.; Wilsons & North Eastern Railway Shipping Co. Ltd.

Men of Industry

Personal News of a Business Character Pertaining to the Iron and Steel and Related Fields of Enterprise

ROYAL B. BONGARTZ, formerly vice president of the Eastern Bolt & Nut Co., Providence, R. I., recently joined the sales organization of the Worcester Pressed Steel Co., Worcester, Mass.

* * *

W. Vernon Phillips of Phillips & Sons Co., Philadelphia, arrived in England May 4 for a limited stay.

* * *

Edward E. Marshall has been elected secretary and treasurer of the Bearings Co. of America, Lancaster, Pa.

* * *

Douglas Andrews has been appointed sales manager of the Duesenberg Automobile & Motors Co., Indianapolis, Ind., builder of motor cars.

* * *

William H. Walther, formerly superintendent of the Bradley & Hubbard Mfg. Co., Meriden, Conn., has resigned to enter the foundry business in Hartford, Conn., with Edgar B. Spencer.

* * *

Granville P. Rogers has been appointed managing director of the National Council of Lighting Fixture Manufacturers.

H. B. Garrett has been appointed assistant managing director.

* * *

Edward C. Moore of the Erie City Iron Works, Erie, Pa., was re-elected president of the Erie Manufacturers association at a recent meeting. O. G. Hitchcock, Hays Mfg. Co., is vice president, A. M. Doll, Lowell Mfg. Co., treasurer and Dana Jones, secretary.

* * *

H. Kempner has been appointed sales manager of the electric hoist division of the American Engineering Co., Philadelphia. He has been in charge of sales promotion work, including handling of advertising and publicity for the past three years.

* * *

John Bjorn, for 36 years with the Nash Motors Co. and its predecessors at Kenosha, Wis., retired May 1 as general superintendent. He was born in Sweden in 1861 and became a locomotive engineer, coming to America in 1889. When the Thomas B. Jeffrey Co. was organized to make automobiles he became a departmental superintendent, later being given general supervision when Charles W. Nash took over the works in 1916.

* * *

M. C. Booze has resigned as secretary of the American Refractories institute, Pittsburgh, and is succeeded by Miss Dorothy A. Texter, formerly his assistant. Mr. Booze is senior fellow, American Refractories Institute of Industrial Research, University of Pittsburgh.

* * *

W. Scott Thomas has been appointed special sales representative for foundry equipment in the New England territory by Northern Engineering Works, Detroit, manufacturer of electric traveling cranes. Mr. Thomas, who formerly was with J. W. Paxson Co., Philadelphia, will be located at 316 National Exchange Bank building, Providence, R. I.

* * *

H. S. Mitchell has been appointed purchasing agent of the National Acme Co., Cleveland, builder of screw machines and manufacturer of automatic screw machine products.

J. I. Burgess now is handling sale of machine tools and threading tools in the Ohio, Kentucky and West Virginia territory.

W. G. Furlong will handle the sales of all products of the National Acme Co. in Buffalo territory, effective June 1.

* * *

George O. Desautels, president, Desautels Co., manufacturers of drop forging machinery, Indianapolis, is expected home shortly from a three months European trip. Mr. Desautels has completed setting up drop forge machinery for the Lancier Co., Torino, Italy, and for Fenwick Bros. Co., Paris. He acted as a foreign representative for various iron and steel and machinery companies of Indianapolis before entering business for himself.

* * *

Joseph P. Cotton, New York, has retired as director of Willys-Overland Co., Toledo, O., automobile builder. L. A. Miller, vice president, succeeds him. Following directors were re-elected, John N. Willys, George M. Jones, Gordon M. Mather, Charles B. Wilson, H. C. Tillotson, C. O. Miniger, Rathbun Fuller, Thomas H. Tracy, James E. Kepperley and C. B. Mertz. Mr. Willys was re-elected president, Mr. Miller first vice president, J. C. Gerkens, vice president, A. B. Qualy, secretary, G. R. Spencer assistant secretary, and J. H. Gerkins, treasurer.

* * *

E. D. Kilburn, vice president and general sales manager of the Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., announces the following appointments by T. J. Pace, recently appointed director of sales. Appointments are effective immediately. Supervisor of development is T. A. McDowell; supervisor of costs, W. C. Koehler; supervisor of mixed apparatus negotiations, C. F. Floyd; chief clerk, M. H. Scott; motor apparatus, O. F. Stroman, manager; generating apparatus, H. W. Smith; traction apparatus, A. J. Manson, switchgear apparatus, R. A. Neal and distribution apparatus, G. A. Sawin.

* * *

C. S. Stouffer has resigned as works engineer for the Kewanee, Ill., plant of the Walworth Mfg. Co., Boston, and now is connected with Stanley G. Flagg & Co., Inc., Stowe, Pa., founders and manufacturers, in the same capacity. After graduation from Lehigh university, Bethlehem, Pa., in 1906, he was with Westinghouse Electric & Mfg. Co., at East Pittsburgh for three years. He then was with the works at Kewanee, Ill., of the National Tube Co. until the plant was acquired by the Walworth company. He was draftsman, estimator, mechanical engineer and finally works engineer for the Walworth company.

* * *

Bolling Jones Jr., has been named president and general manager of the Atlanta Stove Works, Atlanta, to succeed his father, Sam D. Jones, who retires to become chairman of the board of directors. The retiring president has been active for many years as head of the Atlanta Stove Works. Mr. Jones Jr. has been connected with the company for 10 years. He was graduated from the University of Georgia and began work in a minor capacity in his father's company. He rose to vice president and general manager and

occupied these positions for a number of years prior to his selection as president. The Atlanta Stove Works was founded more than 40 years ago as the Georgia Stove & Range Co.

* * *

E. A. S. Clarke, secretary of the American Iron and Steel institute will sail May 28 for a two month's trip to Europe.

* * *

L. S. Burgett recently has been appointed general superintendent of the Una Welding & Bonding Co., Cleveland.

* * *

D. L. Ferdinand now is manager of the cold-rolled and hot-rolled steel department of the Ziv Steel & Wire Co., Chicago, manufacturer of tool steel.

* * *

Prof. Collins P. Bliss, for 23 years active in the American Society of Mechanical Engineers, has been appointed associate dean of the college of engineering, New York university, New York.

* * *

H. C. Fletcher, treasurer of the Pacific Pipe & Supply Co., Los Angeles, and with that company since 1910, has resigned effective immediately. After a vacation, Mr. Fletcher will announce his future plans.

* * *

Robert N. Piper for many years in charge of sales in the Buffalo district for the National Automatic Tool Co., Richmond, Ind., has joined the Cincinnati Shaper Co., Cincinnati, as sales engineer.

* * *

Bethune G. Klugh has become vice president of the Southern Manganese Corp., Birmingham, Ala. He had been secretary and chief engineer of the American Ore Reclamation Co., Chicago.

* * *

L. W. Rolfe is resigning from the Simmons Machine Tool Corp., Albany, N. Y., to become affiliated with Taylor Electric Truck Co., Troy, N. Y., manufacturer of trolley trucks and heavy vehicle springs.

* * *

F. F. Gilmore, formerly sales manager with Arthur A. Crafts, Boston, has organized the F. F. Gilmore Co., 198 Dartmouth street, Boston, to conduct a business in bortz diamonds and dressing tools.

* * *

J. M. Washington, has been elected vice president and works manager of the Frank Mossberg Corp., Attleboro, Mass. manufacturer of metal products and advertising novelties. Mr. Washington had been superintendent of the company for seven years.

* * *

W. Scott Thomas has been appointed special foundry equipment representative in the New England territory for Northern Engineering Works, Detroit. His headquarters will be at 316 National Exchange Bank building, Providence, R. I.

* * *

Walter J. Burns, for the past 18 years in the forging industry of Indiana, has been appointed general superintendent of the Mid-West Forge Co., 17301 St. Clair avenue, Cleveland. This company formerly was the Ohio Steel & Brass Co., Cleveland.

* * *

John C. Chandler, in charge of the Cleveland offices of Bethlehem Steel Co., Bethlehem, Pa., and Harry Coulby, of Pickands, Mather & Co. and chairman of United Alloy Steel Co., Canton, O., sailed for Europe May 22. They expect to return early in July.

* * *

Fuller F. Barnes, former treasurer and general manager of the Wallace Barnes Co., Bristol, Conn., has been elected president of the company to succeed his father, Carlyle F. Barnes, who died recently in San Diego, Calif. Harry C. Barnes, formerly secretary, was made treasurer, and John S. Barnes was elected secretary.

* * *

John Hazen resigned as general manager of sales of the Pittsburgh Steel Co. Pittsburgh, effective May 24.

Richard R. Harris, formerly manager of sales of the Pittsburgh Steel Products Co., has been appointed general manager of sales of the Pittsburgh Steel Co. and subsidiaries. George W. Jones, formerly assistant to Mr. Hazen, has been appointed manager of sales of the Pittsburgh Steel Co.; Charles F. Palmer, the manager of sales at Chicago, has been made manager of sales of the Pittsburgh Steel Products Co.; and E. L. Benedict remains as manager of sales of the National Steel Fabric Co.

* * *

Frank J. Cole, metallurgist for the Walworth Co., Boston, was elected chairman for the coming year of the Boston chapter, American Society for Steel Treating at the meeting of that body May 7. Leslie D. Hawkridge, vice president, Hawkridge Bros. Co., was elected vice chairman and Howard E. Handy, metallurgist for the Saco Lowell Shops, was re-elected secretary-treasurer.

* * *

E. Theodore Sproull, assistant to the president of Trumbull Steel Co., Warren, O., has resigned effective May 24. Mr. Sproull was associated with the Trumbull company 12 years, being at times assistant sales manager, and then general sales manager, being made assistant to the president after the recent reorganization. Mr. Sproull has not announced definite plans for his future connection.

* * *

Charles B. Officer, formerly assistant to the president of Sullivan Machinery Co., Chicago, manufacturer of mining and quarrying machinery, has been made chief engineer in charge of engineering problems of new machinery and changes in designs. He was graduated from Yale university as a mechanical engineer in 1915, being connected with the Sullivan company since.

* * *

Raymond F. Buckley, for many years chief engineer of Robert H. Hassler, Inc., Indianapolis, has been made plant manager, in complete charge of production. Mr. Buckley is secretary of the Indiana section, Society of Automotive engineers.

Guy H. Lemmon, sales manager, has been made vice president in charge of sales.

Arthur P. Holt, treasurer has been re-elected.

Bookings of Steel Plates Increase in April

Washington, May 25.—Bookings of fabricated steel plates in April totaled 32,736 tons, compared with 29,763 tons in March, and were the heaviest since June 1925, according to reports to the department of commerce from 36 companies. April bookings were at 48 per cent of capacity compared with 44 per cent in March and 33 per cent in April 1925. Further comparisons of bookings, follow:

	Total	Oil storage tanks	Gas holders	Blast furnaces	Stacks and miscellaneous
1923	539,043	296,128	44,576	9,815	141,359
1924	313,109	123,368	43,747	12,601	108,046
1925—					
April	22,430	6,547	1,460	691	9,351
Tot. 4 mo.	92,801	17,090	15,683	6,126	34,548
May	27,684	8,503	2,118	404	10,141
June	34,402	16,327	2,192	373	11,349
July	29,272	16,327	2,284	373	11,349
Aug.	29,261	7,500	3,671	1,240	11,826
Sept.	23,983	8,458	1,510	425	10,600
Oct.	28,338	8,076	1,432	2,500	12,621
Nov.	28,557	7,492	4,559	581	9,491
Dec.	31,585	7,714	3,172	407	14,776
Totals	325,883	87,541	36,621	12,658	129,511
1926					
January	25,077	8,165	2,286	1,720	9,434
February	30,809	9,630	4,068	806	9,315
March	*29,763	6,531	5,048	377	12,383
April	32,736	6,042	5,261	1,857	17,092
Tot. 4 mo.	118,385	30,368	16,663	4,760	48,224

*Revised.

Obituaries

JOHN F. LEWIS, former superintendent of the Lakeside plant, Otis Steel Co., Cleveland, died May 20, at the age of 49 in Memphis, Tenn., following a sudden illness while returning from Florida. He succeeded Harry Hyatt as general superintendent April 1, 1923, in the twenty-fourth year of service in the steel industry. Shortly after graduating from Massachusetts Institute of Technology, he entered the laboratory of Duquesne works of Carnegie Steel Co. in 1899. Later he was placed in charge of the open-hearth department of the Duquesne works and next was in charge of open hearths for the American Steel & Wire Co. at its Donora works. He was transferred to the Newburgh works at Cleveland and in 1922 became general superintendent of the Schoenberger works of the Steel & Wire company. From there he went to the Otis Steel Co.

* * *

Bailey B. Nagle, president of the Nagle Engine & Boiler Works and the Pennsylvania Boiler Works, Erie, Pa., died there May 6.

* * *

Thomas D. Pickard, an executive of the Bass Foundry & Machine Co., Fort Wayne, Ind., died recently in Chicago at the age of 70 years.

* * *

George L. Hamilton, managing director of the Davis & Furber Machine Co., North Andover, Mass., maker of textile mill machinery, died recently at his home, aged 62.

* * *

Joseph H. Champ, former president of Bishop & Babcock Mfg. Co., Cleveland, manufacturer of plumbing supplies and other metal products, died recently in that city at the age of 68 years.

* * *

Per Thorsten Berg, former chief engineer of Carnegie Steel Co., Pittsburgh, and technical representative in Europe for the United States Steel Corp., died in Stockholm, Sweden, May 14 at the age of 73. Mr. Berg was made United States vice consul in Sweden in 1915.

* * *

Harold S. Moore, Philadelphia district sales manager for the Central Iron & Steel Co., Harrisburg, Pa., died at his home in Philadelphia May 23 following an 18 months illness. He was born 46 years ago and started with Charles K. Barnes Co., which formerly represented the Central Iron company in Philadelphia. Later Mr. Moore was appointed district representative. He has been president of the Steel Club of Philadelphia.

* * *

Godfrey Stengel Jr., aged 59, president and founder of the Pittsburgh Tool Steel Wire Co., Monaca, Pa., died May 17 in his home in Pittsburgh following a brief illness. Mr. Stengel was born in East Birmingham, now Pittsburgh. He was engaged in the iron and steel business for 30 years. In 1902 he founded the Pittsburgh Tool Steel Wire Co., one of the leading independent producers of cold drawn fine steels in the United States. He was a member of the American Society for Steel Treating.

* * *

Frederick Will Sr., president of the Sterling Range & Foundry Corp., Rochester, N. Y., died in that city recently aged 74. He was born in Rochester July 19, 1851 and was educated in Germany. For two years he was with Bacon & Will, Toledo, O., retail stove dealer, returning to Rochester to organize the Will Stove Co. On July 2, 1924 the company name was changed to Sterling Range & Furance Corp. His three sons, Phillip Will, vice president; Fred K. Will Jr., treasurer and Walter Will, secretary and sales manager, have been with the company for many years. The late Mr. Will was president twice of the National Association of Stove Manufacturers.

* * *

Prof. John J. Flather, head of the department of mechanical engineering, University of Minnesota, Minneapolis, died May 15 there. He was connected with the university since 1898 when he came from Purdue university, Lafayette, Ind. Professor Flather was born June 9, 1862 at Philadelphia. He was graduated in 1885 from Sheffield Scientific school of Yale university, and later from Cornell university, and did some work at the University of Edinburgh. He had some practical experience in European and American machine shops.

He has written various books on technical subjects. He was a member and former vice president of the American Association for the Advancement of Science, and member of the American Society of Mechanical Engineers, the American Institute of Electrical Engineers, and the Society for the Promotion of Engineering education.

* * *

Paul B. Huston, aged 47, advertising manager of the Cleveland Automatic Machine Co., Cleveland, died from heart trouble while driving his machine, May 24.

* * *

Daniel F. Lepley, president and general manager of the Connellsville Mfg. & Mine Supply Co., Connellsville, Pa., died of pneumonia there May 17, aged 62. Mr. Lepley held over 100 patents on mining machinery and was known nationally as a consulting engineer on mining problems. He founded the Connellsville Mfg. & Mine Supply Co. in 1901, being general manager until his death. He was born Feb. 14, 1864 in Somerset county, Pennsylvania. He came to Connellsville about 48 years ago, becoming a machinist apprentice in the Baltimore & Ohio railroad shops. Mr. Lepley was with the Connellsville Machine & Car Co. when he left to form his own company.

* * *

Commander Stevenson Taylor, a national figure in the shipping and shipbuilding industry died May 19 at his home in New York, aged 78. Mr. Stevenson graduated from the College of the City of New York and in 1864 began with the North River iron works of Fletcher, Harrison & Co. He was chief draftsman from 1870 to 1883, and was vice president and general superintendent of W. & A. Fletcher Co. from 1883 to 1904. He was vice president of the Quintard Iron Works of New York from 1904 to 1914 and president of the American Bureau of Shipping from 1916 to 1926. Mr. Stevenson has been president of the Webb Institute of Naval Architecture since 1890. He was twice president of the Society of Naval Architects and Marine Engineers. He had many important connections and in 1924 received the conspicuous service cross of the State of New York for notable war service.

Total production of iron ore in Vizcayan provinces of Spain in 1925 was 2,083,740 metric tons, against 2,383,000 tons in 1924, and 3,864,000 tons in 1913. Exports through Bilbao in 1925 are estimated at 1,500,000 tons.

Current Statistics of Industry

Booking of Structural Steel Holds Steady

Washington, May 25.—Computed bookings of structural steel in April totaled 216,550 tons, according to reports to the department of commerce. Actual bookings of 183,134 tons were reported by 177 companies having 258,280 tons monthly capacity. Bookings were at 71 per cent compared with 68 in March and 76 per cent in April, 1925. Shipments fell from 81 per cent in March to 80 per cent in April while in 1925 they gained from 65 to 71 per cent in the same period. By tonnage, shipments in 1926 are much heavier than in 1925. Following are further comparisons of bookings and shipments based on returns from 204 companies:

1925	Actual tonnage	Per cent of capacity	Computed tonnage	Shipments computed
April	204,936	76	231,800	231,800
Total (4 mos.)	....	....	793,000	817,400
May	183,823	68	207,400	231,800
June	229,130	86	262,300	234,850
July	217,834	81	247,050	250,100
Aug.	209,752	78	237,900	244,000
Sept.	216,428	80	244,000	240,950
Oct.	239,680	89	271,450	268,400
Nov.	191,170	71	216,550	225,700
Dec.	200,147	74	225,700	240,950
Total (12 mos.)			2,705,350	2,754,150
1926				
Jan.	161,408	59	179,950	207,400
Feb.	*163,526	60	183,000	195,200
March	†182,142	68	207,400	247,050
April	‡183,134	71	216,550	244,000
Total (4 mos.)	....	....	786,900	893,650

*Reported by 200 companies with capacity of 271,510 tons.
†Reported by 197 firms with a capacity of 267,910 tons.
‡Reported by 177 companies with 258,280 tons capacity.

Babbitt Consumption Up

Washington, May 25.—Total apparent consumption of babbitt metal in March was 5,860,543 pounds, compared with 5,139,952 pounds in February and 5,644,288 pounds in March 1925 according to reports from 27 companies to the department of commerce. Sales by manufacturers totaled 4,852,805 pounds in March as against 3,867,710 pounds in February. Further comparisons follow:

1925	Total apparent consumption	Sales by manufacturers	Consumption by producers
March	5,644,288	4,395,901	1,248,387
Total (3 mos.)	16,492,090	13,120,056	3,372,034
April	5,126,416	3,928,136	1,198,280
May	5,081,668	4,189,558	892,110
June	5,074,966	4,085,125	898,841
July	5,184,196	3,694,386	1,489,810
August	5,441,823	4,068,706	1,373,117
September	4,621,033	3,579,780	1,041,253
October	5,550,247	4,169,870	1,380,377
November	4,954,683	3,534,026	1,420,657
December	4,878,806	3,910,160	968,646
Totals	62,405,928	48,279,803	14,126,125
1926			
January	5,152,694	3,708,383	1,444,311
February	5,139,952	3,867,710	1,272,242
March	5,860,453	4,852,805	1,007,738
Total (3 mos.)	16,153,189	12,428,898	3,724,291

Tractor Shipments Up

Washington, May 25.—Shipments of electric industrial trucks and tractors in April totaled 107 compared with 139 in March. Tractors gained from 11 in March to 17 in April while all other trucks and types fell from 128 to 90. Further comparisons, revised to date, follow:

SHIPMENTS OF ELECTRIC INDUSTRIAL TRUCKS AND TRACTORS IN NUMBERS

1925	Tractors	Domestic All other types	Exports
Quarter ending March 31	45	259	41
Quarter ending June 30	49	280	50
Quarter ending Sept. 30	57	286	12
Quarter ending Dec. 31	41	295	25
1925 Total	192	1,120	128
1926			
Quarter ending March 31	44	310	17
January, 1926	21	86	4
February	15	96	5
March	11	128	8
April	17	90	4

Engine Shipments Drop

Washington, May 25.—Domestic shipments of locomotives in April totaled 134 and foreign 17, according to reports to the department of commerce from leading manufacturers. Unfilled orders at the end of April totaled 713, of which 580 were steam and 44 electric for domestic delivery and 60 steam and 29 electric for foreign shipment. Following are comparisons of shipments by months:

Year and Month	Shipments Domestic Total	Steam	Electric	Unfilled order Domestic Total	Steam	Electric
1920	2,683	1,318	306	.....	.....	.....
1921	1,558	830	221	.....	.....	.....
1922	1,405	1,056	128	.....	.....	.....
1923	3,378	2,982	207	.....	.....	.....
1924	1,554	1,312	99	.....	.....	.....
1925						
April	101	78	14	490	343	41
Total (4 mo.)	404	275	46	.....	.....	.....
May	101	65	9	478	324	48
June	114	58	8	411	274	47
July	76	56	12	386	259	39
Aug.	118	91	6	334	199	48
Sept.	100	42	16	390	278	41
Oct.	93	47	21	530	386	40
Nov.	106	52	8	585	435	46
Dec.	104	68	18	708	557	54
Total	1,216	755	144	.....	.....	.....
1926						
Jan.	121	96	11	653	506	53
Feb.	163	101	22	572	442	60
March	162	146	11	780	635	50
April	151	122	12	713	580	44
Total (3 mo.)	597	465	56	.....	.....	.....

April River Shipments Show Added Gain

Pittsburgh, May 25.—Further gains in shipments of iron and steel products out of the Pittsburgh district over the rivers are registered in April as compared with March. Twelve hundred tons were transported over the Allegheny river in April, 46,868 tons over the Monongahela, 31,391 tons over the Ohio. The total shipments of all products for the Allegheny, Monongahela and Ohio rivers respectively, are as follows: 202,090 tons, 1,919,679 tons and 761,947 tons. The total for the Monongahela includes 1,576,120 tons of coal. Following are further comparisons of iron and steel shipments.

	Allegheny river	Monongahela river	Ohio river
April	1,200	46,868	31,391
March	.....	34,666	25,675
February	250	23,577	20,223
January, 1926	30	16,535	16,700
December	610	20,506	37,423
November	530	25,800	49,041
October	15	22,200	25,260
September	3,560	31,430	22,987
August	.....	29,010	42,004
July	.....	23,960	35,835
June	132	30,000	27,791
May	735	32,479	42,466
April	797	23,350	18,375
March	200	22,328	27,000
Totals, 1923	1,064	291,689	190,336
Totals, 1924	56,720	266,074	216,138
Totals, 1925	7,479	304,217	365,844
Total, 1926 to date	1,480	121,646	93,989

Stoker Orders Larger

Washington, May 25.—Mechanical stoker sales in April totaling 145, were the heaviest since July 1925 when 147 were sold, according to reports from 12 manufacturers to the department of commerce. Fire tube installations dropped from 31 to 22 in the March-April period while water tubes gained from 101 to 123 in the same period. Further comparisons follow:

	Stokers sold	Fire tube boilers	Water tube boilers
1923 Total	1,464	177	1,287
1924 Total	1,128	161	967
1925 Total	1,348	263	1,085
April	120	23	97
May	122	23	99
June	128	26	102
July	147	30	117
August	91	27	64
September	119	34	85
October	114	22	92
November	76	8	68
December	108	21	87
January, 1926	72	10	62
February	83	12	71
March	132	31	101
April	145	22	123

Here and There in Industry

Live Information Which Records the Expansion of Various Lines of Productive Enterprise

STEEL PRODUCTS CO., Cleveland, has changed its name to Thompson Products Co. and at the election of officers made several changes. C. E. Thompson has been elected president, W. D. Bartlett, senior vice president; C. W. Miller, vice president and general manager; E. G. Thompson, vice president and manager of replacement sales division; F. C. Crawford, vice president and manager of the Detroit plant; J. A. Krider, treasurer; W. M. Albaugh, secretary. These officers form the board of directors with S. L. Mather, C. N. Osborne, A. A. Stearns and F. S. Borton. The company manufactures special valves for automobiles.

* * *

SANTA ROSA BRASS & BRONZE FOUNDRY CO., Santa Rosa, Calif., has completed its new plant in a suburb.

* * *

ASBESTOS SHINGLE, SLATE & SHEATING CO., Ambler, Pa., Royal Mattison, president, is seeking a site for a plant in the West to give more advantageous distribution of its products.

* * *

STANDARD STEEL & BEARINGS INC., Plainville, Conn., has added to its annular ball bearing line a complete series of thrust bearings, rounding out its capacity for service to the automotive and industrial field.

* * *

AUTOMOBILE SCREW PRODUCTS CO., Cleveland, C. W. Blossom, president, has abandoned the manufacture of screw products and will devote its capacity to a recently patented transmission lock for automobiles.

* * *

MERCON REGULATOR CO., 2457 South Western avenue, Chicago, recently incorporated, is producing a device for regulating pressures and will have it manufactured by contract. E. T. McCarthy is president, D. S. Walker vice president and G. L. Dickson secretary.

* * *

INTERSTATE STEAMSHIP CO., a subsidiary of the Jones & Laughlin Steel Co., Pittsburgh, has taken over operation of the Union dock at Ashtabula Harbor, O., formerly operated by the Pollock & Becker Co., Cleveland. J. M. Kennedy remains as superintendent of the docks, which he has directed for several years.

* * *

LUMINITE PRODUCTS CORP., Salamanca, N. Y., recently incorporated with $125,000 capital to manufacture aluminum printing rolls for wall paper and cloth, has started work on an addition to the plant of the Salamanca Foundry & Machine Works, which it has taken over for production and routing of rolls.

* * *

MORGAN CONSTRUCTION CO., Worcester, Mass., manufacturer of steel mill machinery, has bought the Summer street plant of the Wickwire Spencer Steel Corp., including three brick buildings with 73,000 square feet floor area. The plant will be used for production of the Morgan Construction Co.'s machinery.

* * *

THE city of Milwaukee has completed construction of its municipal service building, a $450,000 shop group designed to handle all municipal machinery and transportation service and repair work, as well as considerable construction in firefighting equipment, highway machinery, garbage and ash disposal vehicles. Bids are being asked for equipment. R. E. Stoelting is commissioner of public works.

* * *

HAYS CORP. is the new name adopted by the Joseph W. Hays Corp., Michigan City, Ind., manufacturer of draft gages, flue gas analyzers and other combustion instruments. Joseph W. Hays, founder of the corporation, has disposed of his interest and is succeeded as president by Philip T. Sprague, formerly vice president and general manager. Several new instruments have been placed on the market recently and the plant is being enlarged to give increased production.

* * *

BELLE CITY MALLEABLE IRON CO., Racine, Wis., C. A. Anderson general manager, is preparing to start work on the second unit of its plant replacement project, which contemplates a total investment of nearly $800,000 in buildings and equipment. The first unit, a new foundry and annealing shops, was finished during the past year, and the new construction includes a 1-story foundry extension, 120 x 200 feet. The work is in the hands of A. A. Wickland & Co., 5 South Wabash avenue, Chicago.

* * *

CALIFORNIA MANUFACTURERS association has elected Otto H. Fischer president. He is president of the Union Gas Engine Co., Oakland, Calif. Vice presidents of the association include Watt L. Moreland, Los Angeles; George L. Clark, Alameda; H. W. Cole, Eureka. J. R. Miller, Oakland, has been made treasurer; Fred Boegle, Oakland, secretary. Directors include W. C. Hay, Los Angeles; Robert P. Miller, Los Angeles; George S. Parker, San Diego; T. A. Hays, San Francisco; J. Q. Patton, San Jose; J. S. Sawyer, Napa; Thomas W. Norris, Livermore; E. M. Tilden and H. H. Whiting, Oakland.

* * *

RILEY STOKER CORP., Worcester, Mass., has elected Fred H. Daniels president to succeed the late R. Sanford Riley. Mr. Daniels has been general manager. Aldus C. Higgins has been made chairman of the board of directors and vice president. Other vice presidents are William Pestell, Worcester; R. T. Riley, Winnipeg, Man.; S. A. Armstrong, Toronto, Ont. David K. Beach, Worcester, is secretary and treasurer. The board of directors consists of the following: Aldus C. Higgins, Fred H. Daniels, William Pestell, David K. Beach, George N. Jeppson, Charles L. Allen, James W. Armour, Worcester, and Henry S. Pickands, Cleveland.

Eastern States Furnace Group To Meet

Announcement is made that the annual meeting and election of officers of the Eastern States Blast Furnace and Coke Oven association will be held at the Edgewood Country club, Pittsburgh, June 1. A dinner will be served at 6:30 p. m. after which W. H. Wright, vice president and general manager, Foundation Oven Corp., will present a paper on "The Plant of the Hudson Valley Coke & Products Corp. at Troy, N. Y., and the Foundation Oven."

Steel Imports and Exports Gain

Shipments of 194,449 Tons in April Were Heaviest Since January 1924—Receipts Total 112,255 Tons, the Largest Since January 1923—Pig Iron Imports in April Were 55,473 Tons—Tubular Products Exports Higher

EXPORTS of iron and steel products from the United States in April, totaling 194,449 tons were heaviest of any month since January 1924, and imports for the month just ended were the largest at 112,255 tons, since January 1923, according to data just compiled and released by the iron and steel division of the department of commerce.

Imports for the first four months of 1926 total 384,642 tons compared with 335,982 tons for the same period of 1925. Exports in the first third of this year amounted to 695,659 tons or considerably more than the 554,836 tons shipped in the first four months of 1925.

Pig iron continues the most important factor in foreign trade of the United States. Imports in April were 55,473 tons compared with 54,825 tons in March, and 33,299 tons in April 1925. Imports for the first four months of 1926 totaled 217,843 tons. Ferromanganese imports also gained,

IMPORTS AND EXPORTS
Gross Tons

	—1926—		—1925—	
	Imports	Exports	Imports	Exports
Jan.	79,067	174,585	77,105	141,777
Feb.	100,213	157,187	92,353	102,299
March	93,107	169,438	92,115	155,348
April	112,255	194,449	71,233	155,375
May			67,789	150,612
June			82,853	136,847
July			64,642	139,861
Aug.			68,489	188,465
Sept.			68,445	136,791
Oct.			80,045	141,817
Nov.			79,771	171,134
Dec.			98,400	142,209
Total	384,642	695,659	943,240	1,762,571

ORIGIN OF IRON, STEEL IMPORTS
Gross Tons

	Imports of			
Countries	steel bars	steel ingots, etc.	steel scrap	cast iron pipe
Belgium	4,614	272	.....	1,078
British W. Indies	.....	.....	300	.....
Canada	.....	.....	1,842	3
France	1,676	886	.....	3,660
Germany	889	.....	.....	.....
Netherlands	597	.....	.....	299
Norway	.....	.....	35	.....
Other Europe	58	189	26	.....
Sweden	663	.....	.....	.....
United Kingdom	85	101	.....	.....
Total	8,582	1,448	2,203	5,040

ORIGIN OF MANGANESE IMPORTS
Concentrates
Gross Tons

	April		Four months ended
	1926	1925	Apr., 1926
Germany	16	.....	42
Spain	.....	3,690	.....
Netherlands	12	.....	12
Norway	1,700	.....	1,721
Soviet Russia in Europe	23,842	5,577	67,933
Turkey-in-Eurpoe	2,809	.....	2,809
United Kingdom	56	.....	261
Canada	40	.....	40
Brazil	18,540	3,325	50,989
Chile	198	.....	1,436
British India	2,717	.....	5,917
British W. Africa	5,117	2,349	15,415
Totals	55,047	14,941	147,175

IRON AND STEEL IMPORTS
Gross Tons

	—April—		Jan. thru Apr.	
	1926	1925	1926	1925
Pig iron	55,473	33,299	217,843	173,249
Ferromanganese and alloys	9,854	7,228	21,560	29,067
Ferrosilicon	1,714	.....	3,063	2,273
Scrap	2,203	2,870	19,804	36,240
Iron slabs	13	.....	42	1
Steel ingots, blooms, etc.	1,448	4,138	8,484	13,522
Steel bars	8,582	4,138	28,251	14,230
Iron bars	757	790	2,252	3,461
Wire rods	783	732	3,444	2,297
Hoops, bands and scroll	1,900	.....	5,370	3,037
Boiler, other plate	63	.....	1,046	98
Sheets, skelp and saw plates	769	293	1,971	1,441
Tin plate	1,327	34	1,380	72
Structural shapes	8,553	8,313	24,519	23,642
Rails and splice bars	10,015	2,671	16,418	15,123
Cast iron pipe	5,040	.....	13,207	10,310
Other pipe and tubes	1,976	†4,424	8,318	†2,611
Barbed wire	172	.....	11,884	1,416
Round iron and steel wire	433	229	1,439	911
Steel telegraph, telephone wire	.....	‡.....	82	‡371
Flat wire and strip steel	238	224	967	690
Wire rope and strand	172	482	610	576
Wire cloth and screening	37	.....	113	85
Other wire	205	.....	683	135
Nails, tacks and staples	361	8	862	179
Bolts, nuts, rivets, washers	69	.....	206	43
Castings and forgings	98	235	824	816
Horseshoes	.....	.....	.....	86
Totals	112,255	71,249	384,642	335,982

†Formerly classified as tubular products, now segregated so as to show cast iron pipe and other pipe and tubes; latter includes welded pipe or jointed pipe, electrical conduits, ball bearing and other tubes. Cylindrical or tubular tanks and drums have been dropped, now being shown by value instead of quantity.

‡Listed as wire rope and insulated wire prior to Jan. 1, 1926. Hoops, bands and scroll includes cotton ties.

Other wire now includes covered or insulated wire, corset and dress steel and galvanized fencing wire.

ORIGIN OF PIG IRON IMPORTS
Gross Tons

	—April—		Four months ended April
	1926	1925	1926
Belgium	650	520	5,543
France	5,051	1,065	19,565
Germany	13,529	7,221	52,693
Netherlands	8,330	3,781	31,404
Norway	2	.....	2
Sweden	409	.....	883
United Kingdom	15,651	5,715	59,560
Canada	939	420	2,631
Panama	1,114	.....	1,114
British India	9,798	14,557	43,675
Totals	55,473	33,299	211,843

ORIGIN OF FERROMANGANESE IMPORTS
Gross Tons

	—April—		Four months ended April
	1926	1925	1926
France	74	.....	116
Germany	.....	.....	243
Norway	2,468	1,584	4,835
Soviet Russia in Europe	4,619	.....	4,619
United Kingdom	255	5,496	5,494
Canada	2,438	148	6,253
Totals	9,854	7,228	21,560

ORIGIN OF IRON ORE IMPORTS
Gross Tons

	April	
	1926	1925
Germany	511	.....
Spain	174	11,385
United Kingdom	10	7,839
Canada	586	450
Cuba	39,350	65,140
Chile	139,800	61,400
Algeria and Tunis	14,300	18,150
Other countries	.....	1,824
Totals	194,731	166,190

EXPORTS OF IRON AND STEEL
Gross Tons

	—April—		Jan. thru Apr.	
	1926	1925	1926	1925
Pig iron, not including ferro-alloys	2,010	1,632	6,640	6,380
Ferromanganese and spiegeleisen	2	3	170	3,056
Scrap	13,759	6,101	37,252	14,751
Ingots, blooms, skelp, etc.	5,966	5,840	16,512	20,942
Iron bars	509	454	1,284	1,752
Steel bars	13,096	9,427	48,903	39,470
Alloy steel bars	508	194	1,965	1,504
Wire rods	1,201	991	6,708	8,117
Plates	10,397	11,728	43,026	34,376
Galvanized sheets	17,746	12,093	62,732	69,110
Black steel sheets	17,760	7,793	62,199	26,880
Black iron sheets	1,328	693	7,944	3,774
Hoops, bands and strip steel	4,082	3,259	18,340	12,800
Tin plate, terne plate, etc.	22,124	14,389	72,502	56,279
Structural shapes, plain	11,616	8,853	44,356	29,574
Structural shapes, fabricated	7,936	6,929	32,687	23,417
Metal lath	356	198	1,472	707
Steel rails	15,859	11,693	45,291	43,422
Rail fastenings, switches, frogs, etc.	2,613	3,693	14,739	9,247
Boiler tubes and welded pipe	24,069	26,234	93,056	69,600
Malleable iron screwed pipe fittings	1,841	843	4,524	2,925
Cast iron screwed pipe fittings	1,236	691	3,371	1,696
Cast iron pressure pipe and fittings	737	1,315	2,911	3,840
Cast iron soil pipe and fittings	529	651	2,029	3,573
Plain wire	3,358	3,016	13,728	12,682
Barbed wire and woven wire fencing	5,997	7,073	21,295	25,027
Wire cloth and screening	141	168	582	598
Wire rope	375	394	1,715	1,609
Insulated wire and cable	26	119	261	322
Other wire and manufactures of	546	623	2,804	2,623
Wire nails	1,242	735	4,240	2,908
Nails other than wire	619	842	2,627	3,295
Tacks	119	.....	318	.....
Horseshoes	30	35	225	224
Bolts, nuts, rivets, except track	1,471	1,714	4,841	5,397
Car wheels and axles	1,175	2,748	4,841	5,397
Iron castings	673	727	2,577	3,149
Steel castings	1,151	377	3,445	1,998
Forgings	237	212	1,016	871
Totals	194,449	155,375	695,659	554,836

totaling 9854 tons compared with 4141 tons in March and 7228 tons in April 1925. Manganese receipts in April were more than double those of March, aggregating 55,047 tons in the former and 27,391 tons in the latter. April 1926 imports were more than three times those of April 1925 totaling 14,941 tons.

Augmented by receipts of 139,800 tons from Chile, iron ore imports for April amounted to 194,731 tons compared with 184,122 tons in March and 166,190 tons in April 1925.

Of finished steel imports, steel bars and shapes and rails and splice bars were features. Steel bar receipts totaled 8582 tons, structural shapes 8553 tons, rails and splice bars 10,015 tons.

Exports were featured by shipments of tin plate, tubular products and sheets. Sheet exports totaled about 37,000 tons, while tin and terne plate shipments aggregated 22,124 tons. Boiler tube and welded pipe shipments totaled 24,069 tons, while steel rails amounted to 15,859 tons. Structural shape exports were 19,552 tons.

U. S. EXPORTS BY COUNTRIES, APRIL

Gross Tons

TO:	April, 1926	January through April 1926	January through April 1925
Azores and Madeira Islands	.....	.....	3
Belgium	514	960	3,464
Bulgaria	6	312	.....
Czechoslovakia	.....	.....	13
Denmark	222	343	295
Finland	672	733	650
France	641	5,913	1,549
Germany	62	789	1,114
Greece	482	1,060	1,089
Hungary	.....	.....	3
Iceland	.....	.....	1
Irish Free State	15	59	1
Italy	8,121	15,126	4,779
Lithuania	.....	2	.....
Malta, Gozo and Cyprus Islands	113	113	1
Netherlands	149	456	1,036
Norway	147	651	1,234
Poland and Danzig	.....	17	21
Portugal	.....	372	256
Rumania	107	1,515	141
Soviet Russia in Europe	98	2,802	96
Spain	120	499	1,563
Sweden	61	266	186
Switzerland	8	27	30
Turkey in Europe	8	636	971
United Kingdom	6,305	18,146	15,251
Yugoslavia and Albania	.....	.....	220
Canada	64,082	252,504	179,949
British Honduras	4	43	46
Costa Rica	457	967	1,277
Guatemala	659	6,079	1,721
Honduras	494	1,522	2,381
Nicaragua	1,299	2,945	1,445
Panama	573	3,096	3,737
Salavador	500	5,096	7.293
Mexico	10,780	33,402	42,703
Miquelon and St. Pierre Islands	5	5	.....
Newfoundland and Labrador	52	199	459
Bermuda	26	53	73
Barbados	8	28	7
Jamaica	171	504	478
Trinidad and Tobago	627	1,957	1,596
Other British West Indies	62	229	330
Cuba	8,901	32,909	40,152
Dominican Republic	700	2,106	1,671
Dutch West Indies	803	1,967	829
French West Indies	.....	3	10
Haiti	370	1,579	527
Virgin Islands of U. S.	10	255	77
Argentine	5,152	24,216	50,455
Bolivia	157	407	829
Brazil	5,313	13,756	14,566
Chile	3,771	18,831	14,389
Colombia	4,171	20,985	18,398
Ecuador	213	531	833
Falkland Islands	1	2	.....
British Guiana	56	79	278
Dutch Guiana	114	396	18
French Guiana	.....	46	.....
Paraguay	7	19	60
Peru	5,549	14,412	4,924
Uruguay	740	2,105	1,873
Venezuela	5,299	24,345	10,613
India	1,697	12,534	6,917
British Malaya	977	4,062	1,875
Other British East Indies	.....	.....	1
Ceylon	4	60	18
China	4,061	12,011	9,925
Java and Madura	1,977	3,837	1,331
Other Dutch East Indies	3,640	8,983	3,238
Hejaz, Arabia and Mesopotamia	.....	.....	4
Hongkong	126	675	1,466
Iraq	19	60	.....
Japan and Chosen	29,850	96,265	46,531
Kwantung	125	3,531	746
Palestine and Syria	81	93	180
Persia	.....	.....	1,038
Philippine Islands	7,880	20,698	17,557
Siam	29	35	58
Soviet Russia in Asia	13	13	.....
Turkey in Asia	.....	50	9
Australia	2,885	7,670	7,642
British Oceania	5	37	23
French Oceania	3	27	54
New Zealand	928	1,567	676
Other Oceania	.....	.....	1
Belgian Congo	.....	1	.....
British East Africa	12	17	1
British South Africa	119	2,088	15,799
British West Africa	5	18	37
Egypt	977	2,189	1,155
Algeria and Tunis	.....	2	.....
Other French Africa	.....	4	1
Italian Africa	.....	4	.....
Liberia	8	39	1
Morocco	.....	62	24
Portuguese East Africa	46	635	458
Other Portuguese Africa	5	17	106
Total	194,449	695,659	554,836

IMPORTS DURING APRIL, 1926 AND THE FIRST FOUR MONTHS OF 1926

Gross Tons

Country	April, 1926	Four months ended April, 1926
Austria	93	326
Belgium	20,575	57,853
Czechoslovakia	22	647
Denmark	.....	31
Finland	340	797
France	12,661	41,347
Germany	18,578	67,546
Italy	1	39
Lithuania	.....	1,530
Netherlands	11,591	44,775
Norway	2,505	4,931
Soviet Russia in Europe	4,619	4,619
Sweden	2,101	8,645
Switzerland	.....	5
United Kingdom	19,208	72,079
Canada	8,746	23,545
Honduras	1	1
Panama	1,114	7,748
Mexico	.....	172
Other British West Indies	300	403
Cuba	.....	3,597
Dominican Republic	.....	62
Chile	.....	4
India	9,798	43,928
China	.....	2
Java and Madura	.....	1
Japan	2	9
	112,255	384,642

Export Railway Cars

Washington, May 25.—Exports of railway cars in March included three steam railway passenger cars all going to Canada, 764 freight cars and 92 mine cars. Cuba took 440 freight cars, and Colombia 208. Argentina imported 44 freight and 36 mine cars while Mexico took 21 freight and 38 mine cars.

Enameled Orders Drop

Washington, May 25.—Orders received in April for enameled sanitary ware dropped from March levels, according to returns to the department of commerce from 21 manufacturers. Shipments and unfilled orders for baths gained, but orders received dropped to 110,476 from 118,076. Orders received for lavatories, sinks and miscellaneous dropped from 8000 to 11,000 each. Unfilled orders for small ware fell from 205,003 at the end of March to 198,203 at the end of April.

A new electrically-operated stock-line recorder, developed by the Freyn Engineering Co., will be installed at the new stack of the Central Furnace Co., Massillon, O.

DESTINATION OF IRON AND STEEL EXPORTS

Gross Tons

Countries	Rails	Galvanized sheets	Plates not fabricated	Tin, terne plate	Steel sheets black	Barbed wire	Steel bars	Steel scrap
Argentina	.....	671	88	1,029	42	520	.....	.....
Australia	.....	178	1,141	.....	.....	125	.....	.....
Brazil	610	1,561	95	413	.....	1,205	184	.....
British India	.....	952	.....	.....	.....	.....	.....	.....
British S. Africa	.....	11	.....	.....	.....	22	.....	.....
British Malaya	.....	.....	.....	325	.....	.....	.....	.....
Canada	4,280	2,634	8,321	3,158	5,476	531	6,067	5,276
Chile	232	151	84	841	.....	.....	.....	.....
China	395	244	.....	2,752	.....	.....	283	156
Colombia	352	665	24	24	.....	457	.....	.....
Cuba	815	906	99	368	.....	327	352	.....
Central America	857	647	14	.....	28	349	184	.....
Italy	.....	.....	.....	1,613	.....	.....	.....	6,482
Japan	5,463	1,438	.....	5,538	10,885	.....	150	1,623
Mexico	52	1,613	93	856	260	1,046	779	45
Europe	.....	.....	4	.....	133	.....	32	.....
Other Europe	.....	715	.....	523	.....	.....	.....	.....
Other Countries	104	2,785	178	1,097	243	325	796	.....
Other S. America	.....	591	.....	.....	.....	248	.....	.....
Peru	58	.....	153	850	141	.....	448	.....
Philippine Islands	2,373	.....	.....	549	467	435	500	.....
United Kingdom	.....	.....	.....	.....	85	.....	3,321	177
Venezuela	28	.....	.....	129	.....	.....	.....	.....
Java and Madura	.....	.....	.....	1,484	.....	.....	.....	.....
Dutch W. Indies	37	.....	.....	54	.....	.....	.....	.....
Dutch E. Indies	.....	1,852	.....	.....	.....	.....	.....	.....
Belgium	203	.....	.....	.....	.....	.....	.....	.....
Norway	.....	132	.....	.....	.....	.....	.....	.....
Uruguay	.....	.....	.....	521	.....	.....	.....	.....
Total	15,859	17,746	10,289	22,124	17,760	5,590	13,096	13,759

German Steel Trust Is Completed

(*Concluded from Page* 1411)

by the new steel trust at about 16s 6d to 17s ($4 to $4.15) c.i.f. Rotterdam.

German exports of iron and steel in March largely exceeded those of previous months, and were in excess of last year's exports, except for beams. The accompanying table shows German imports and exports of iron and steel, in metric tons. Exports of structural shapes advanced from 74,111 tons in Febuary to 88,372 tons in March, and beams from 6340 tons to 10,705 tons. Exports of semifinished products increased from 20,396 tons to 26,685 tons and permanent way material from 34,957 tons to 55,520 tons. Exports of cast iron pipe increased from 4762 tons to 7793 tons and rolled and drawn pipe from 22,903 tons to 27,580 metric tons.

	Imports	Exports
Mon. ave. 1924	133,664	174,923
Mon. ave. 1925	168,654	312,786
1925		
October	100,408	358,831
November	94,124	321,694
December	87,509	399,520
1926		
January	67,597	391,172
February	69,331	376,553
March	69,375	466,364

Negotiations for allocation of foreign markets are continuing. Discussions between Germany and France concerning a revival of the old Luxemburg agreement have been resumed. The statutes of the European Rail Manufacturers association, known as the Irma are not yet completed. Negotiations concerning markets for bright wire are to be conducted between British and Danish producers. Negotiations between the German and Belgian works are retarded on account of the fact that the Clouteries et Trefileries des Flandres do not seem willing to join other Belgian producers. There have been several meetings between the German and British pipe makers.

Luxemburg Sets Record

Brussels, May 5. (*European Staff Service*)—Pig iron and steel production in Luxemburg during March reached the highest mark recorded in the industrial history of the country. The output of pig iron was 212,729 metric tons, compared with 185,098 tons in February and 205,018 tons, the previous highest mark reached in October 1925. The March tonnage included 207,466 tons of basic bessemer pig iron, 3993 tons of foundry pig iron, and 1270 tons of gray forge pig iron.

Output of steel ingots and castings totaled 195,784 metric tons, against 170,447 tons in February and 185,027 tons which was the previous highest mark, reached in October, 1925. The March output included 193,038 tons of basic bessemer steel, 2121 tons of open-hearth steel, and 625 tons of electric steel. The following table gives production figures for the first three months of this year compared with the monthly averages of preceding years, in metric tons:

Mon. ave.	Pig iron	Steel ingots and castings
1913	212,320	110,500
1923	177,220	100,100
1924	181,100	157,195
1925	195,335	173,690
1926		
Jan.	203,673	173,875
Feb.	185,098	170,447
March	212,729	195,784

Furniture Exports Gain

Washington, May 25.—Sale of American-made metal furniture in recent months have been showing increases in all parts of the world, it is pointed out by the specialties division of the department of commerce. Figures now available for the first quarter of 1926 indicate an 8 per cent increase over the similar period last year.

Last year exports of metal furniture were valued at $4,652,603, while in the two preceding years the total values were below $4,000,000. Latin America has led in purchasing.

French Prices High as Franc Drops

PARIS, May 14. (*European Staff Service*)—Exchange depreciation continues to be reflected in high prices. Reparations coke, it is reported, will be advanced another 20 francs ($0.66) per ton June 1. This will bring the price to 190 francs ($6.27), compared with 143 francs ($4.72) Jan. 1. Deliveries of reparations coke by Germany to France during April totaled 261,000 tons. Many French industrialists are of the opinion that they could obtain this coke considerably cheaper by dealing direct with the German Kohlen-Syndikat. At present this business is handled by a committee on the reparation board representing the French government.

Basic bessemer foundry pig iron is quoted for export at £3 ($14.60) f.o.b. Antwerp. For domestic consumption this quality is now priced at 420 francs ($13.86) f.o.b. furnace. If the anticipated advance of 20 francs ($0.66) in the price of reparations coke is applied June 1 an increase of at least 30 francs ($0.99) may be expected in pig iron quotations.

Lorraine mills are competing successfully for export business on finished steel products. Merchant bars have been done as low as £4 18s ($23.75) f.o.b. Antwerp. Shapes average £4 13s ($22.50). Belgian and Luxemburg mills show no willingness to meet these prices except on attractive specifications. Domestic demand is brisk and jobbers are buying heavily in anticipation of higher prices. Deliveries are becoming extended. It is reported that two large groups, Marine et Homecourt and de Wendel, already have withdrawn

Franc—$0.033

from the market. The French pipe manufacturers' syndicate has announced an advance of approximately 10 per cent in the price of black and galvanized butt-welded pipe. Seamless pipe prices also have been raised.

Join Raw Steel Union

London, May 10.—(*European Staff Service*)—It is reported from Sarrebruck that the plants of Burbacherhutte at Sarrebruck and Rothe Erde at Aix-la-Chapelle, which both belong to the Arbed-Terres Rouges combine, have joined the Rohstahlgemeinschaft, or German raw steel union. These plants also have joined the German merchant bar union. As a result, the Saar district is more closely affiliated to the German syndicate. Until now only the Roechling plants of Voelklingen were affiliated to the raw steel syndicate. These plants in joining the syndicate necessarily bind themselves to limiting their production in the same proportion as other German concerns. At the last meeting of the raw steel union the output of steel ingots and castings remained fixed at 65 per cent of normal capacity.

Canadian Mill Busy

Toronto, May 17.—Many large orders have been received by the Algoma Steel Co. and its plant at Sault Ste. Marie is working at capacity. In addition to large rail orders an increase is noted in the demand for automobile steel. A large part of the plant's activity results from an order for bridge steel for the South Shore bridge at Montreal. The opening of navigation has provided an outlet for the Canadian National railway rails, which were being rolled at the mills, and these are now being delivered by the water route to Fort William.

French Exports Lower in March

Paris, May 8. (*European Staff Service*)—Exports of French pig iron in March totaled only 56,445 metric tons, compared with 68,487 tons in February. The March figure is the lowest registered since October 1925. Exports of steel were 259,032 metric tons, against 253,322 tons in February. There was an increase in imports of pig iron and steel, especially the latter. March imports of pig iron were 3236 metric tons, compared with 2244 tons in February. Steel imports were 16,686 metric tons, aginst 6996 tons in February. The March volume of imports is the highest reached since February 1925. The following table gives import and export figures for the first quarter of 1926 compared with monthly averages of the three preceding years, in metric tons:

Mon. ave.	Pig iron	Steel	Pig iron	Steel
1923	5,305	55,495	49,300	153,990
1924	3,540	56,780	63,900	187,380
1925	2,693	11,703	58,855	272,270
1926				
Jan.	2,657	6,906	64,888	266,471
Feb.	2,244	6,996	68,487	253,322
March	3,236	16,686	56,445	259,032

Construction and Enterprise

Concise and Timely Business Building Opportunities from the Field of Industry

BIRMINGHAM, ALA.—Grogan Capping Device Corp. Inc. has been incorporated to manufacture bottle capping machines by F. M. King, 1641 North Thirty-first street.

LONG BEACH, CALIF.—Acme Machinery Co., A. T. Cooper president, has taken a long term lease on 100 x 500 feet on West Seventh street and will build a plant.

LOS ANGELES—Axelson Machine Co., manufacturer of oil well tool makers, is building a 2-story plant at Boyle avenue and Randolph street, with 12,000 square feet of floor.

SAN FRANCISCO—Pacific Rolling Mill Co., Mississippi and Seventeenth streets, will build a 1-story shop 125 x 170 feet.

HARTFORD, CONN.—The New York, New Haven & Hartford railroad has awarded steel for two additions to its Readville, Mass., shops.

NEW BRITAIN, CONN.—New Britain Spring Co., 706 West Main street, will build a 1-story addition, 27 x 64 feet.

MILTON, FLA.—Lewis T. Kline, Alpena, Mich., has bought six acres and will establish plant to manufacture lathes and other woodworking machinery.

SARASOTA, FLA.—C. A. Barnes, 1600 Walnut street, Philadelphia, has bought site and probably will build fabricated steel yards, office building, machine shop and ornamental iron works. Hill Construction Co. has the contract.

ROME, GA.—Rome Stove & Range Co., John M. Berry president, is increasing capacity 50 per cent; has let contract to Ingalls Iron Works, Birmingham, Ala., for warehouse building 60 x 308 feet.

THOMASVILLE, GA.—Thomasville Variety works, K. E. Mack president, will rebuild its burned plant.

CHICAGO—D. O. James Mfg. Co., 1124 West Monroe street, manufacturer of gears, will build a 3-story plant 84 x 120 feet.

CHICAGO—General Metal Spinning Co., 2825 North California avenue, has let contract to Mutual Construction Co., 2632 Warren avenue for a 1-story plant 40 x 100 feet.

CHICAGO—International Steel & Iron Co., 431 North Michigan avenue, has bought a site 175 x 330 feet at Kedzie avenue and Fifty-first street, on which to build a warehouse after plans by S. Scott Joy, 2001 West Pershing road.

CHICAGO—Alkasan Products Inc., 140 South Dearborn street, has been incorporated with $2500 capital to manufacture medical and dental supplies and instruments by Henry Lutzenkirchen, Henry M. Hagan and M. L. Halla.

CHICAGO—Alloy Steel Corp., East Ninety-sixth street and Calumet river, has been incorporated with 1000 shares no par value to manufacture carbon steel by Thomas G. Deering, 20 South LaSalle street, Arthur B. Markus and Herman A. Brassert.

CHICAGO—The Glatt Co., 3640 Dickens avenue, has been incorporated with $20,000 capital to manufacture ornamental and other sheet metal work by W. E. Glatt, Elizabeth Glatt and William M. Phares. Davis, Ramsay & Kracke, The Rookery, are correspondents.

CHICAGO—Beacon Steel Furniture Co., 1841 Carroll avenue, has been incorporated with $20,000 capital to manufacture steel furniture by William Behrstock, Charles Hyman and A. E. Rosenthal. Gottlieb, Schwartz & Markheim, 310 South Michigan avenue, are correspondents.

Where additional information is presented, reference is made to date of issue in which previous item appeared.

NORTH CHICAGO, ILL.—Biflex Products Co. has let contract to Tobias Jensen, 825 North avenue, Waukegan, Ill., for two 1-story buildings 125 x 180 feet and 100 x 150 feet, replacing those destroyed by fire.

PEORIA, ILL.—South Side Foundry Co., 2900 South Washington street, has been incorporated with $20,000 capital by John H. Brophy, John M. McCarthy and Jeremiah C. Murphy.

Pneumatic Tool Exports

March, 1926

	Rock drills number	Pneumatic portable tools number	Air compressors Capacity up to 25 cubic ft. number	Air compressors Capacity over 25 cubic ft. number
Belgium	....	2	9	14
Den. & Far. Is.	....	1	16	1
France	100	63	1	19
Germany	11	7	.....	3
Italy	50	12	3	5
Norway	1	1	1	.....
Poland and Danzig	....	.....	.....	2
Portugal	....	.....	1	1
Rumania	....	.....	1	.....
Spain	66	87	4	18
Sweden	....	1	6	1
United King.	101	219	193	27
Canada	66	198	226	27
Guatemala	1	1	.....	3
Panama	2	.....	.....	.....
Salvador	....	.....	.....	1
Mexico	87	8	8	8
Newfoundland and Labrador	1	.....	.....	.....
Cuba	....	9	13	2
Dutch West Indies	....	.....	3	.....
Argentina	1	5	54	6
Bolivia	20	1	.....	.....
Brazil	....	.....	51	8
Chile	25	32	31	10
Colombia	2	95	11	7
Peru	29	12	11	7
Uruguay	3	.....	4	1
Venezuela	....	.....	7	.....
Aden	....	1	.....	.....
British India	4	67	16	8
British Malaya	....	2	.....	.....
China	25	2	6	2
Other Dutch E. Indies	12	.....	.....	.....
Japan, inc. Chosen	62	107	74	31
Palestine	....	.....	.....	1
Philippine Is.	....	.....	28	.....
Australia	47	218	106	27
Fr. Oceania	....	1	.....	.....
New Zealand	5	43	16	2
British South Africa	145	73	18	7
Algiers and Tunis	39	.....	.....	2
Other Fr. Afr.	2	.....	.....	1
Port. E. Afr.	....	.....	1	1
Other Spanish Africa	1	.....	.....	.....
Total	908	1,268	919	247

EVANSVILLE, IND.—Chicago & Eastern Indiana railroad has started construction of an additional roundhouse, to be equipped for service.

MONTPELIER, IND.—Jackson Shovel Co. will build two additions, 45 x 100 feet and 45 x 200 feet. H. M. Pforsich is manager.

SOUTH BEND, IND.—Koontz-Wagner Electric Co. has been incorporated with $50,000 capital to manufacture electrical machinery and appliances by Harvey Koontz, C. F. Wagner and Frank L. Wagner.

BALTIMORE—Republic Radiator Corp., Union avenue and Jones Falls street, has been incorporated with $25,000 capital by Comus D. Penney and associates.

BALTIMORE, MD.—Maryland Meter Works, E. S. Dickey manager, 309 East Saratoga street, will build a 6-story plant 80 x 200 feet.

BALTIMORE, MD.—Gould Car Lighting Corp., 601 Title building, has been incorporated to manufacture lighting appliances for railway cars by Robert France and Charles B. Hoffman.

NORTH BEACH, MD.—Hydraulic Stone Machinery Co. has been incorporated with $50,000 capital to manufacture machinery by John W. Hayes, North Beach, and C. G. Platt, Washington.

TOWSON, MD.—Black & Decker Mfg. Co. has bought a site of 30,000 square feet at Oakland, Calif., and has let contract for a building for warehouse, service and sales.

BOSTON—Boston Cutting Die Co., 202 A street, E. W. Hanson president, is having plans made for a 1-story plant.

BOSTON—National Co., 110 Brookline street, Cambridge, is building a 2-story addition, 45 x 95 feet.

BOSTON—Garstein Bros. & Cooper, 3 First street, South Boston, manufacturers of boilers, will build a 2-story plant 60 x 100 feet at First and C streets.

BOSTON—Kollen Automatic Service Co. has been incorporated to manufacture automatic vending machines, with $50,000 capital by Edward A. Kollen president, Adrian G. Augente and James W. Hodgson.

BOSTON—Anderson Screw Products Co. has been incorporated with 900 shares no par value to manufacture implements, tools and machinery by Oliver A. Wyman, 613 Old South building, Alphonso A. Wyman and Helen E. Moisan.

BOSTON—Multi-Bore Grinding Machine Co. has been incorporated with $100,000 capital and 1000 shares no par value by Robert D. Gould president, Fred W. Hodgson treasurer, 8 Davenport street, Cambridge, Mass., and Clarence K. Morrill.

BOSTON—H. M. Haley Electric Co. Inc. has been incorporated with 1000 shares with no par value to manufacture electric fixtures and fittings by Humphrey M. Haley president and treasurer, 137 Pearl street, Anna E. Haley and Ernest A. Comes.

BOSTON—New England Oil Burner Corp. has been incorporated with $50,000 capital to manufacture oil burners, furnaces and heaters by E. V. K. Willson president, Rutland, Vt., George R. Corey treasurer, 115 Blake street, Mattapan, Mass., and Lillian

McLaren.

BOSTON—General Engineering & Construction Corp. has been incorporated with 1000 shares no par value to do an engineering and constructing business on electric and power plants and similiar work by Robert J. Holmes president, 13 Norwood street, Winchester, Mass., Arthur W. Leavitt treasurer, Piermont street, Wollaston, Mass.

GARDNER, MASS.—Independent Fibre Co. has been incorporated with 1000 shares no par value to manufacture looms and other weaving machinery by Patrick H. Murphy president, 131 Oak street, William M. Quad and M. M. Burns.

LOWELL, MASS—Johnston Bonner Inc. has been incorporated with $10,000 capital to manufacture textile machinery by Fred Johnston president, 380 Wilder street, Howard B. Bonner, treasurer, 99 Luce street and Alice J. Bonner clerk.

LYNN, MASS.—Lobb & Co., Inc. has been incorporated with $10,000 capital to manufacture machinery and plumbing supplies by Anthony C. Lobb president, Fred R. Haight, 20 Pearl street, treasurer and Augustine J. Callahan.

NEW BEDFORD, MASS.—Gunning Boiler & Machine Co., Shawmut street and Hathaway road, is having plans made for rebuilding its burned plant.

NEW BEDFORD, MASS.—Khoury Warp Stop Motion Inc. has been incorporated with $100,000 capital to manufacture textile machinery by Harry E. Khoury president, John B. Louney treasurer, 69 Willis street, and George J. Peters.

SPRINGFIELD, MASS.—Moore Drop Forging Co. will build additions and remodel its plant on Birney avenue.

WARREN, MASS—Warren Steam Pump Co. Inc. has been incorporated with $450,000 capital to manufacture pumps, machinery and electrical apparatus by Herbert K. Hallett president, William J. Shuttleworth treasurer and H. F. Phinney clerk.

BAY CITY, MICH.—Bay City Electric Steel Castings Co. and the Alladin Co. have bought the city's east side waterworks.

DETROIT—Wolverine Tube Co., 1411 Central avenue, manufacturer of steel tubing, is having plans made for a 2-story addition.

DETROIT—Michigan Central railroad is adding two freight houses and additional track age to its terminal here.

DETROIT—Detroit & Michigan Stove Co., William T. Barbour president, 6900 East Jefferson street, has let contract to Malow-Barry Co., 2631 Woodward avenue, for a 1-story addition to enameling plant, 75 x 100 feet.

DETROIT—Gotfredson Truck Corp. has been incorporated to manufacture automobiles and accessories, with $1,500,000 capital, by Benjamin Gotfredson, 1723 Iroquois street, Robert B. Gotfredson and Mark H. Coleman.

DETROIT—John G. Furs Level Co. has been incorporated with $25,000 capital to manufacture levels, hooks, darbys and trowels by John G. Furs, 4344 Lenox street, Detroit, Joseph S. Corriveau, Lakewood, O., and Daniel J. Ryan, Detroit.

MILFORD, MICH.—Agnew Electric Welder Co. has been incorporated with $50,000 capital to manufacture electric welding machinery and other devices.

MT. PLEASANT, MICH.—American Enameled Products Co. is rebuilding a plant and is in the market for machinery.

ROCHESTER, MICH.—Oakland Stamping & Machine Co. is making considerable alteration and addition to its plant.

MINNEAPOLIS—Ke Hawke Mfg. Co., 421 South Sixth street, D. J. Kerner president, will build a 2-story plant 85 x 124 feet for manufacture of tire repair shop equipment.

KANSAS CITY, MO.—J. G. Jakobe & Sons Inc., 820 East Fifteenth street, has been incorporated by Albert Jakobe and others.

KANSAS CITY, MO.—E. J. Thomas, 3414 Karnes street, has let contract to S. W. Hite, Merriam, Kans., for a 1-story foundry 50 x 75 feet.

KANSAS CITY, MO.—Kansas City Filling Station Supply Co. has been incorporated with $10,000 capital to manufacture filling station equipment by S. D. Collins, 3632 Gar-

Industrial Business Changes

AERO PULVERIZER CO., New York, has been bought by the Power Specialty Co., New York, to complete its equipment for producing complete steam generating units.

* * *

Steel Products Co., Cleveland, has changed its name to Thompson Products Co. Inc.

* * *

Texas Laundry Machinery Co., Dallas, Tex., will remove its plant and offices to San Antonio, Texas.

* * *

Superior Bearing Co., Indianapolis, Ind., has opened a plant at 821 South East street.

* * *

Cunningham Furnace Co., Sarnia, Ont., manufacturer of industrial furnaces, has opened a branch in Detroit.

* * *

Joseph W. Hays Corp., Michigan City, Ind., manufacturer of combustion apparatus, has changed its name to Hays Corp.

* * *

A. P. Oxtoby Co., Wheeling, W. Va., dealer in iron and coal, has been changed to the West Virginia Fuel & Iron Co., with A. P. Oxtoby as president.

* * *

Bethlehem Steel Co. has removed its branch office at St. Louis from 920 Chemical building to 1824 Arcade building.

* * *

Detroit Vapor Stove Co., Detroit, has established a branch sales office at 15 Fourth street, in charge of Lewis Starrett.

* * *

Cap Screw & Nut Co. of America, 290 Hudson street, New York, will open a branch warehouse and office at 15 Kirk place, Newark, N. J.

* * *

Tulley Equipment Co., St. Louis, sales representative of the Climax Engineering Co., Clinton, Iowa, has moved its office, sales and service departments to 2339 Pine street.

* * *

Jackson Shovel Co., Montpelier, Ind., H. M. Pforsich general manager, has formed a merger with Hubbard & Co., Pittsburgh, and the Russel Shovel Co., formerly of Aliquippa, Pa. The plant at Montpelier will be enlarged to accommodate operations and the burned plant of Hubbard & Co. will not be rebuilt.

* * *

P. H. Webber Co., Hoopeston, Ill., manufacturer of automobile accessories, has moved its plant and offices to Racine, Wis., in part of the plant of the former Racine-Sattley Wagon & Carriage Works.

* * *

B. Davis Co., steel plates, sheets and bars, New York, has removed its office to the Corn Exchange Bank building, 74 Varick street, at Canal street. Its warehouse will be continued at 44 Laight street.

* * *

Industrial Relations Counselors Inc., is the new name of the industrial relations department of Curtis, Fosdick & Belknap, 61 Broadway, New York. It has established new and separate offices at 165 Broadway, New York.

* * *

Taubman Corp., H. P. Taubman president, has been appointed Oklahoma-Kansas distributor for Central Tube Co. of Pittsburgh. The Taubman Corp. is putting in a large pipe yard and pipe threading machine shop at Tulsa, Okla.

Iron and Manganese Ores and Minerals

Iron Ore

LAKE SUPERIOR ORES

Per Gross Ton Lower Lake Ports	
Old range bessemer, 51½ per cent iron	$4.55
Mesabi bessemer, 51½ per cent iron	4.40
Old Range nonbessemer, 51½ per cent iron	4.40
Mesabi nonbessemer, 51½ per cent iron	4.25

EASTERN LOCAL ORES

Cents per unit delivered at Eastern Pennsylvania and New Jersey furnaces	
Foundry and basic 53 to 63 per cent	9.00 to 10.50
Copper free low phosphorus 53 to 65 per cent	nominal

FOREIGN IRON ORE

Cents per unit, f.o.b. cars Atlantic ports	
Spanish low phosphorus, 52 to 54 per cent	10.00 to 11.00
North African low phosphorus	9.25 to 9.75
Swedish and Norwegian low phosphorus, 68 per cent	10.25 to 10.75
Swedish foundry or basic, 66 to 68 per cent	9.00 to 9.50
Spanish foundry or basic, 50 to 54 per cent	8.75 to 9.25
North African foundry and basic 50 to 54 per cent	8.50 to 9.00

Manganese Ore

Prices do not include duty at rate of 1 cent per pound of metallic manganese contained.

Brazilian, minimum 47 per cent	nominal
Indian minimum 47 per cent	nominal
Caucasian, 53 to 55 per cent	
Washed	40 cents c.i.f. tidewater

Fluor Spar

85 and 5 per cent grade

Washed gravel, Kentucky and Illinois mines, per net ton	$18.00
Washed gravel, imported duty paid eastern tidewater, per net tons	17.50 to 17.75

field street, and others.

ST. JOSEPH, MO.—Grindle Electric Welder Co., 204 Edmond street, has been incorporated by R. R. Shepard and associates.

ST. JOSEPH, MO.—Revelation Aluminum Mfg. Corp. has been incorporated to manufacture Fred A. Newberger, 1714 Bartlett street, and associates.

ST. LOUIS—Chapman Tool & Mfg. Co. has been incorporated by Fred J. Neihaus, 5781a McPherson street.

ST. LOUIS—Laclede Brass Works Inc. has been incorporated with $50,000 capital by William Modra, 3438 Pestalozzi street.

ST. LOUIS—Chapman Tool & Mfg. Co. has been incorporated to manufacture garage equipment by E. F. Niehaus and O. H. Ebmeyer.

ST. LOUIS—Carter Carburetor Co., 2838 North Spring avenue, will build a 2-story plant 35 x 60 feet.

ST. LOUIS—Herman Body Co., 1831 South Third street, manufacturer of automobile bodies, will build a 1-story plant 110 x 204 feet at 1815 North Twenty-third street.

ST. LOUIS—Stinson Adding Machine Improvement Co., H. S. Stinson president, 321 South Grand avenue, is having plans drawn for a 2-story factory and office building 60 x 250 feet.

ST. LOUIS—King Mfg. Co., 230 South Clark street, Chicago, will build a 1-story foundry 140 x 480 feet and 2-story office building, 25 x 40 feet. General contract to C. P. Norris, 1220 South Eleventh street.

ST. LOUIS—Ledford-Linnemeyer Heating Co. Inc. has been incorporated with $5000 capital to manufacture heating and refrigerating plants by Spotwood A. Ledford, 4039 Flad avenue, Raymond W. Linnemeyer.

ASBURY PARK, N. J.—Power Plant Equipment Co. has been incorporated with $25,000 capital by Harlan E. Cecil, Clarence S. Ashley and Raymond A. Flynn. Ashley & Foulds, New York, are attorneys.

BURLINGTON, N. J.—The United States Cast Iron Pipe & Foundry Co. will start work at once on the erection of a foundry addition.

EAST BURLINGTON, N. J.—United States Cast Iron Pipe & Foundry Co., 71 Broadway, New York, will build a 1-story addition to its plant here.

KEARNEY, N. J.—Kearney Plumbing Supply Co. Inc. has been incorporated with $50,000 capital by Samuel Yanow, Sidney R. Weinstein, Jacob Kurtz, Newark, and Morris Poster, Kearney.

NEWARK, N. J.—Modern Device Mfg. Corp. has been incorporated with $6500 capital and 200 shares no par value by David Harper, Amos Harper, Newark, John A. Gillmeier, Irvington, N. J., and Frances Gash, Newark.

NEWARK, N. J.—Port Mfg. Co. has been incorporated with 2500 shares no par value to manufacture machinery by Eleanor R. Coburn, Clara E. Kleiber and Raymond Schroeder. Porter, Zink & Lafferty, Newark, are attorneys.

PATERSON, N. J.—Alward & Washburn Inc. has been incorporated to manufacture machinery with $50,000 capital by Frank Alward, Charles F. Alward, Maurice Washburn, and William W. Washburn, Hawthorne. Herman H. Hinger, Paterson, is attorney.

UNION CITY, N. J.—Arrow Mfg. & Machine Co. has been incorporated with $100,000 capital by John Baach, G. Frank Shanley, North Bergen; Valentine Old, Weehawken; William F. Burke, Union City.

BINGHAMPTON, N. Y.—W. W. Gold Chisel Co. has been incorporated with $50,000 capital to manufacture automobile parts by A. H. Green, L. B. Williams and A. E. Whitmarsh. B. Baker, Binghampton, is attorney.

BROOKLYN, N. Y.—Pisciotta Bros., 426 Troutman street, manufacturer of plumbing goods, will build a 4-story plant 68 x 90 feet. Laspia & Samenfeld, 269 Broadway, are architects.

BUFFALO—Noisom Auto Compass has been incorporated with 300 shares no par value to promote inventions and patents by B. I. Freedman, M. J. Freedman and M. Robins.

CHAFFEE, N. Y.—O'Dell & Eddy Co., manufacturer of iron shoe lasts, will rebuild its burned plant at Arcade.

ELMIRA, N. Y.—Chemung Foundry Co., 502 Erie street, Benjamin Rathburn general manager, has let contract to Pulford & Dempsey, 317 Pennsylvania avenue, for a 1-story foundry addition 90 x 150 feet.

JAMESTOWN, N. Y.—Nu-Way Screen Corp. has been incorporated with 300 shares no par value to manufacture window and door screens by E. C. Lindbeck, T. E. Murray and S. R. Hardwick. Mott, Ottaway & Phillips, Jamestown, N. Y., are attorneys.

LONG ISLAND CITY, N. Y.—Ellwood Mfg. Co. has been incorporated with $25,000 capital and 150 shares no par value to manufacture surgical and optical appliances by G. C. Elting, J. E. Woodland nad E. E. Woodland. Winnie & McDougall, Jamaica, N. Y., are attorneys.

MASSENA, N. Y.—Aluminum Co. of America, Oliver building, Pittsburgh, is having plans made for a wire mill here 150 x 310 feet.

MT. VERNON, N. Y.—Hy-Power Mfg. Corp. has been incorporated with $20,000 capital to manufacture automobile timers and spark plugs by D. M. Benford, L. Benford and M. E. Phillips. S. Greenbaum, World building, New York, is attorney.

NEW YORK—Happiness Shaving Blade Corp. 45 John street, has been incorporated with $5000 capital to manufacture steel razor blades.

NEW YORK—Plaza Metal Bed Corp. has been incorporated with $50,000 capital by H. Schurr, S. Schurr and H. Isaacson. Kotzen Bros., 50 Chambers street, are attorneys.

NEW YORK—Acme Machine & Motor Co. has been incorporated with $10,000 capital by I. Paulson, R. Lesser and M. M. Weintraub. P. Rabinowitz, 291 Broadway, is attorney.

NEW YORK—Feat Bolt Lock Co. has been incorporated with $50,000 capital by L. Biersack, L. W. Santasiere and G. S. Hoffman. J. H. Mariano, 41 East Forty-second street, is attorney.

NEW YORK—Thor Metal Products Co. has been incorporated with $20,000 capital to manufacture window locks by I. Bien, M. Kummer and M. Lerner. Ort & Frost, 280 Broadway, are attorneys.

NEW YORK—Red-O-Lier Corp. has been incorporated to manufacture lighting fixtures with 100 shares common stock no par value by C. I. Minkoff, M. W. Turner, W. D. Turner. S. J. Berger, Flushing, is attorney.

NEW YORK—Roger Mfg. Co. has been incorporated with $5000 capital to manufacture automobile accessories by D. Paris, W. L. Prody, and E. Richman. B. F. Lerch, 302 Broadway, is attorney.

NEW YORK—Manufacturers Machine & Tool Co. has been incorporated with $10,000 capital to manufacture machinery and tools by P. H. Berger and L. Stawinski. D. H. Lehman, 291 Broadway, is attorney.

NEW YORK—Tank Installation Co. has been incorporated with $10,000 capital to manufacture fuel oil and acid tanks by N. R. Crean, T. G. Grimes and J. L. Grimes. M. Tachna, 51 Chalmers street, is attorney.

NEW YORK—Natoli Mfg. Co. has been incorporated with $300,000 capital and 3000 shares no par value to manufacture electrical and mechanical devices by G. Carlucci, P. Dilieto and I. A. Corrao. S. J. Corran, 261 Broadway, is attorney.

NEW YORK—Vitalis Hummer has been in-

corporated with $50,000 capital to operate a mechanical and electrical development company by V. Hummer Jr., J. A. Leek and J. J. Negley. D. E. Hanlon, Woolworth building, is attorney.

NEW YORK—Hotel Kitchens has been incorporated to manufacture kitchen equipment with 500 shares no par value by A. Lindey, J. J. Shapiro and J. J. Wildberg. Greenbaum, Wolff & Ernst, 285 Madison avenue, are attorneys.

ROCHESTER, N. Y.—Stromberg-Carlson Telephone Manufacutring Co. is inquiring for steel for a plant addition.

SYRACUSE, N. Y.—Selflock Screw Products Co. Inc. has been incorporated with $250,000 capital to manufacture self-locking bolts and nuts and electrical specialties by M. E. Jennings, 1810 Grant boulevard, Syracuse.

ASHEVILLE, N. C.—Asheville Supply & Foundry Co. has bought a 22-acre site and is considering plans for new plant.

CHINA GROVE, N. C.—The Belmont Iron Works, Philadelphia, has been awarded contract for steel for a cotton mill here.

LINCOLNTON, N. C.—The Roger-Crawford Spinning Mills has awarded steel for a plant addition here to the Southern Engineering Co.

NORTHWOOD, N. C.—Local interests are inquiring for steel for a hydroelectric plant, to be erected near here.

CINCINNATI—Boye & Emmes Machine Tool Co. is rebuilding burned plant. Will be in operation by July 1.

CLEVELAND—American Monorail Co. has been incorporated with 2000 shares no par value by A. E. Beers, R. S. Dunning, Fred S. Wallace, J. J. McAnerny and C. T. Venglarik.

CLEVELAND—Cleveland Shock Absorber Co. has been incorporated with 500 shares no par value by R. O. Bartholomew, Paul F. Reynolds, J. W. Corry, E. W. Leeper and W. E. Miller.

IRONTON, O.—Grasselli Chemical Co., Cleveland, has bought 100 acres in Kentucky opposite Ironton on which plant will be built for manufacture of heavy chemicals.

LIMA, O.—Superior Motor Coach Body Co., H. L. Breckenridge president, East Kibby street, has let contract to Lima Construction Co. for a 1-story addition 60 x 490 feet.

SPRINGFIELD, O.—Springfield Malleable Iron Co., T. W. Ludlow president, will build two structures, 40 x 126 feet and 73 x 100 feet to replace a fire loss.

SPRINGFIELD, O.—Mast Foos & Co., Main street, manufacturer of pumps, lawn mowers, has given contract to Bellefontaine Bridge & Iron Co. and T. A. Graham for a 1-story plant 100 x 210 feet to replace fire loss.

BLACKWELL, OKLA.—Blackwell Pipe Line Co., capital $100,000, incorporated by A. B. Imel and C. T. Stout, Blackwell, and R. C. Jones, Cushing, to build and operate gas pipelines.

HOLDENVILLE, OKLA.—New-Pro Refining Co., capital $150,000, chartered by H. V. Schoff, T. D. Ramsey and T. A. Jackson to oporate oil refinery.

OKLAHOMA CITY, OKLA.—Chamberlain Supply Co., pump and machinery dealers, has completed corrugated iron shop, 40 x 32 feet, for pipe threading.

OKLAHOMA CITY, OKLA.—Oklahoma Gas & Electric Co. has increased capacity of Harrah power station to 35,000 kilowatt by installation of one 20,000 horsepower turbine and a 1000 horsepower boiler burning pulverized fuel.

PAWHUSKA, OKLA.—Andrew Ball has purchased a lead and zinc mining lease, the first ever sold in Osage county, and plans mining development on a 160-acre tract near Nelogany.

TULSA, OKLA.—Louder Pattern & Model Works has been established by V. D. Louder at 1032 East Independence street.

TULSA, OKLA.—Braden Steel & Winch Co. plans to increase capacity of plant for manufacture of truck winches shortly. William Sadewasser is purchasing agent.

TULSA, OKLA.—Burt Corp., capital $100,000, incorporated by L. G. Burt, 805 Mayo building, C. B. Johnson and E. B. Marshall to manufacture an oil well swab.

TULSA, OKLA.—Oklahoma Tank Co., Cushing, now absorbed by National Tank Co. has increased capital to $100,000 to provide for extensions. Jay Walker is president.

TULSA, OKLA.—National Expansion Joint Co., capital $10,000, incorporated by S. M. Ward, 824 South Xanthius place, and W. O. Senseman and C. E. Senseman.

TULSA, OKLA.—Westinghouse Electric & Mfg. Co. plans new warehouse facilities for heavy electrical equipment. W. F. Barnes, 923 Mid-Continent building is district manager.

ALTOONA, PA.—Perfection Mfg. Co. of Pennsylvania has been incorporated with $15,000 capital to manufacture automobile accessories by John J. Walsh 1921½ Union avenue, Altoona, G. S. Snyder and Paul E. Beaver.

NEW BRIGHTON, PA.—Correct Measure Co., Moose building, Rochester, N. Y., manufacturer of gasoline pumps, is building a 1-story plant 140 x 150 feet at Fallston, Pa.

PHILADELPHIA—The Turner Construction Co. has been awarded the general contract for the erection of an addition to the local plant of the General Electric Co.

PHILADELPHIA—Contract has been awarded by Loos & Dillworth, 726-28 South Swanson street, for a $5000 boiler house, to E. E. Hollenback Inc., 1804 Brandwine street.

PHILADELPHIA—Phoenix Iron Co., 22 South Fifteenth street, will make additions and improvements to its plant at Phoenixville, Pa.

PHILADELPHIA—Olney Foundry Co., 180 West Duncannon avenue, has let contract to Northern Construction Co., 1502 North Fifth street for improvements to its foundry.

PHILADELPHIA—Wire-Lock Clamp, Thirtieth and Race streets, has been incorporated with $5000 capital to manufacture wire clamps, fittings and connections by Charles R. Campbell, 1330 Pine street, Samuel J. McCartney and Palled B. Kraut.

PITTSBURGH—Runyan Steel Co. Inc. has been incorporated with $25,000 capital to manufacture iron, steel and metals by William W. Runyan Jr., 516 West Beaver road, Glenfield, Pa., William W. Runyan Sr., and B. R. Averbach.

SCRANTON, PA.—Russell Machine Corp. Inc. has been incorporated with $25,000 capital to manufacture novelties and toys by Charles E. Sunday, 1925 North Washington avenue, H. M. Harris, Albert Brust Jr. and John E. Russell.

YORK, PA.—Eyster-Weiser Co., manufacturer of castings, will rebuild its burned foundry.

YORK, PA.—York Metal Products Co. has been incorporated with $15,000 capital to manufacture valve lifters, guides and other automotive equipment by Edward F. Spangler, 800 East Philadelphia street, York, Frank W. Neuman and C. R. Brandt.

CHATTANOOGA, TENN.—Corley Mfg. Co., A. J. Corley president, 1901 Williams street, is adding to its plant and will improve its equipment.

KNOXVILLE, TENN.—The Southern Railway is inquiring for steel for a car repair shop.

DALLAS, TEX.—Texas Laundry Machinery Co., 1448 North Zang boulevard, will remove its business to San Antonio, Tex., where its production will be increased.

HOUSTON, TEX.—Texas Electric Steel Casting Co. has been incorporated with $8000 capital by C. C. Devore, E. R. Spears and F. G. Sowden.

HOUSTON, TEX.—Dallerup Machinery & Boiler Works Inc. has been incorporated with $10,000 capital by B. E. Dallerup and Gus T. Peters.

SEATTLE—Mechanical Trowel Co. has been incorporated with $99,000 capital by David McMaster, C. E. Sauter and Paul Denhart.

WHEELING, W. VA.—Wheeling Machine Products Co., 1920 Main street, has let contract to Engstrom & Co., 99 Fourteenth street, for remodeling structure at Slacktown for manufacturing plant.

MADISON, WIS.—J. H. Findorff & Son, local contractors, have been awarded the general work on a $100,000 motor truck service headquarters to be built in Madison by the International Harvester Co. W. D. Price, Chicago, is engineer in charge.

MADISON, WIS.—Bids close May 27 with M. E. McCaffrey, secretary, University of Wisconsin Building Corp., for the electric elevators, cold storage plant, refrigerating machinery and system, hardware, lighting fixtures, etc., for the new university refectory, now being erected at a cost of $500,000. The state architect, Arthur Peabody, is in charge.

MILWAUKEE—Fuller-Warren Co., H. A. Viet president, 930 Thirty-second street, has let contract to Worden-Allen Co., Chicago, for a 1-story enameling plant 200 x 300 feet at Center and Thirty-second streets.

MILWAUKEE—William M. Dooley, 744 National avenue, has taken the general contract to erect an automobile building, 43 x 110 feet, at 686 National avenue, for George Barnes and E. J. McGovern.

MILWAUKEE—Contracts are being awarded by A. H. Peters, 1165 Thirty-eighth street,

Refractories

FIRE CLAY BRICK

Per 1000 f.o.b. works

Pennsylvania, No. 1	$40.00 to 43.00
Pennsylvania, No. 2	35.00 to 38.00
Ohio, No. 1	40.00 to 43.00
Ohio, No. 2	35.00 to 40.00
Illinois, No. 2	35.00 to 38.00
Kentucky, No. 1	40.00 to 43.00
Kentucky, No. 2	38.00 to 40.00
Missouri, No. 1	40.00 to 43.00
Missouri, No. 2	35.00 to 38.00
Maryland, No. 1	43.00 to 47.00
Maryland, No. 2	39.00 to 42.00

SILICA BRICK

Pennsylvania	40.00
Chicago	40.00
Birmingham	48.00 to 52.00

MAGNESITE BRICK

Per Net Ton Seaboard Base

9 x 4½ x 2½	65.00

CHROME BRICK

(Per Net Ton)

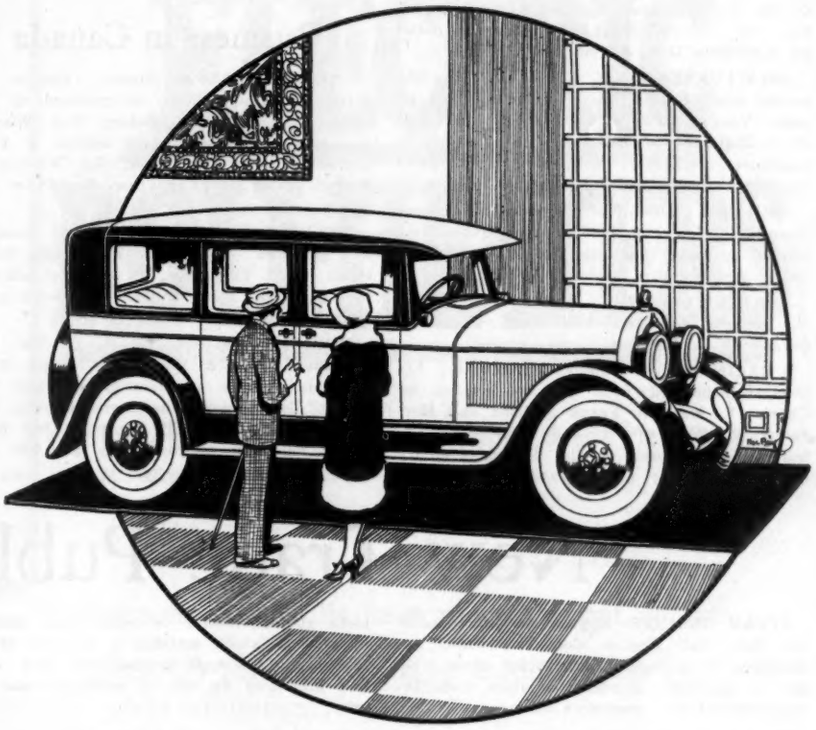
9 x 4½ x 2½	45.00

A Favorable Impression!

FIRST impressions are tremendously important in selling. That's why many large automobile manufacturers specify Mansfield Automobile Sheets. They permit extraordinarily smooth finishing. These finishes are exceptionally durable.

The permanence that Mansfield Automobile Sheets impart to the finished surface is due to the correct porosity of the sheet. This provides a secure unyielding grip for the surface coating.

The ingots from which Mansfield Automobile Sheets are made are surprisingly free from "pipes", seams, etc. Their purity is due to scientific treatment of the metal in the open hearth furnace and the Mansfield method of bottom-pouring.



All qualities of Body Stock, Flat Fender and Hood Stock, Radiator Casing Stock, Crown Fender Stock.

MASTER TEC BRAND

Other Mansfield Products include "Wabik Metal" Sheets for Vitreous Enameling, Metal Furniture Sheets, Milk Can Stock, Electrical Sheets, Pickled and Annealed Enameling Stock for Kitchen Utensils. Sheet, Bars and Ingots.

Mansfield Sheet & Tin Plate Company

Mansfield, Ohio

District Sales Offices:
12-237 General Motors Bldg., Detroit, Mich.
1372 Wrigley Bldg., Chicago, Ill.
410 Pierce Bldg., St. Louis, Mo.
1106 National City Bldg., New York, N. Y.
2002 Union Trust Bldg., Cleveland, Ohio
1504 West Venango Street, Philadelphia, Pa.

Contributing Member
SHEET STEEL
TRADE EXTENSION COMMITTEE

District Sales Offices:
1403 Merchants Bank Bldg., Indianapolis, Ind.
1020 Union Trust Bldg., Cincinnati, Ohio
640 Endicott Bldg., St. Paul, Minn.
237 Rialto Bldg., San Francisco, Calif.
509 Wilcox Bldg., Los Angeles, Calif.
1426 L. C. Smith Bldg., Seattle, Wash.

Automobile Sheets

for the construction of a garage, showroom and repair shop, 60 x 120 feet, 2-story, fireproof, at Fifty-sixth and North avenues.

MILWAUKEE—A charter has been granted to the Smaller & Shapiro Waste Co., capital stock $10,000, to deal in waste materials of all kinds, including scrap, textile, paper, etc. Incorporators are Louis Smaller, Abe Shapiro and Fanny Smaller.

MILWAUKEE—The Dahlman Construction Co., 456 Broadway, is general contractor on a $50,000 manufacturing plant to be erected at 341 Seventh street by the Adcraft Realty Co., 337 Seventh street, according to plans by Architects Dick & Bauer.

MILWAUKEE—The T. M. C. O. Mfg. Co., capital stock $25,000 has been incorporated by John Traudt, 272 West Water street, and P. J. Mott, also of Milwaukee, to manufacture machines, machinery, tools, etc. Plans have not yet been divulged.

OSHKOSH, WIS.—The plant of the General Foundry Co. at 160 Marion street was almost totally destroyed by fire. E. C. Ahlswede, owner and operator, probably will rebuild.

PLATTEVILLE. WIS.—Russell Foundry Co., F. Russell, manager, will build a 1-story foundry 38 x 110 feet.

RACINE, WIS.—Simplex Furnace Co. has been incorporated with $200,000 capital by Charles F. Wratten, Frank J. Kidd and Mortimer E. Walker. It will take over the business and plant of the Simms Foundry Co., manufacturer of furnaces for industrial and domestic heating.

WAUKESHA, WIS.—The Butler Bin Co., capital stock $100,000, has been incorporated by Morgan R. Butler and associates to manufacture a line of metal devices and appliances for use in reinforced concrete and ordinary cement construction. A factory costing about $50,000 is now under construction.

WAUSAU, WIS.—Hammer Blow Tool Co., Thomas H. Jacob owner, manufacturer of automobile and garage tools, will rebuild its plant recently burned.

Business in Canada

CALGARY, ALTA.—Samson Rotary Rod Weeder Ltd. has been incorporated to take over the business of Rotary Rod Weeders, operating in Calgary, with capital of 10,000 shares without par value, by William P. Taylor, Ellen C. Ray, Guy M. Shaw, and others.

MERRITT, B. C.—The town is receiving bids through A. O. R. Yuill, 626 Pender street west, Vancouver, B. C., for additions to waterworks plant and steam electric plant, estimated to cost $17,500.

MORNINGTON FALLS, B. C.—The West Kootenay Power & Light Co., Nelson, B. C., will start work immediately on the third unit of No. 1 power development plant here. The proposed unit will develop 20,000 horsepower and cost approximately $500,000.

SUSSEX, N. B.—The Wallace Machine Works, Ltd., manufacturers of farm machinery, threshing machines, etc., are asking for complete equipment for machine shop now under construction. H. W. Wallace is purchasing agent.

FORT WILLIAM, ONT.—The Fort William hydro commission is receiving tenders for a sub-station to cost $60,000, which is a part of a $250,000 program of hydroelectric expenditure here.

GALT, ONT.—The International Stoker & Supply Co. Ltd., has been incorporated to manufacture and deal in furnaces, stoves, boilers, products from iron, steel, brass, with $50,000 capital stock, by William E. Demill, James C. Hay, Charles R. Widdifield and others.

HAMILTON, ONT.—The Raymond Concrete Pile Co., Ltd., 10 Cathcart street, Montreal, Que., has the contract for pile driving in connection with $300,000 addition to the plant of the Steel Co. of Canada, Ltd., Harvey street, Hamilton.

BROMPTONVILLE, QUE.—The contract for the steel structure here in connection with mills for the Brompton Pulp & Paper Co., has been awarded to the McKinnon Steel Co., Ltd., Sherbrooke, Que., at $100,000.

FARNHAM, QUE.—The American Wringer Co. contemplates building manufacturing plant here and will purchase tools and equipment.

MONTREAL, QUE.—The Montreal Tramways Co. is building large addition to St. Henry garage here and is in the market for general equipment and miscellaneous tools.

New Trade Publications

STEAM ENGINES—Engines manufactured by the Erie Ball Engine Co., Pittsburgh, are described in a bulletin suggesting their wide use in industry. Illustrations show some installations of this company's engines.

REFRACTORIES—Co-operation between maker and user of fire brick, if best results are to be attained, is the message in a leaflet on fire brick issued by the Ashland Fire Brick Co., Ashland, Ky.

GRINDERS—Bench and floor type grinders with single, and tight and loose pulley drives are shown in a catalog issued by the North Wales Machine Co., North Wales, Pa. A rod cutter and a power geared hack saw machine also are shown.

GEAR BLANKS—Buffalo Bronze Die Cast Corp., Buffalo, has issued a broadside covering its chill-cast bronze worm gear blanks, describing its four processes of casting and results attained in varying quality of metal for diverse uses.

BOILER TUBES—Information on boiler tubes, causes and prevention of failure, corrosion and operating conditions, with many engineering data are included in a booklet issued by the Boiler Tube Co. of America, Pittsburgh.

CASTINGS—A pamphlet describing the advantages of pearlite iron used for castings requiring strength just has been mailed by the Whiting Corp., Harvey, Ill. This cast iron is used in products manufactured by this firm.

BLUE PRINTING—A catalog is a list of articles, in its essence, and when this is artistically dressed and presented it becomes something more. The C. F. Pease Co., Chicago, manufacturer of blue print machinery and paper and drafting room supplies, has issued such a catalog in which the complete subject matter is attractively enclosed in binding which matches a de luxe presentation volume, well printed on good paper and breathing an air of wellbeing and solidity.

STEEL TIES—Steel for crossties instead of wood, is one of the developments of the day and Carnegie Steel Co., Pittsburgh, has printed a catalog showing its line of ties and accessories, with actual installations and advantages of the metal over wood in various uses. Engineering data are included.

TACHOMETERS—Recording and indicating apparatus for obtaining the rate of revolution of any kind of machinery is described in a bulletin by the Bristol Co., Waterbury, Conn. Various methods of obtaining this information are illustrated by the company's several forms of apparatus and accessories are shown.

OIL ENGINES—Ingersoll-Rand Co., New York, has issued a bulletin describing its direct-injection oil engines for all purposes. The text consists of technical data and details of a number of engines and illustrations cover a large number of plant layouts, installation views, diagrams and engine details.

ELECTRIC METERS—A bulletin of a series giving instructions for installation, operation and application of its meters has been issued by the Sangamo Electric Co., Springfield, Ill., covering its watthour meter. Illustrations cover details of construction, diagrams show its layout and connections and a table of ratios gives information as to readings.

CRANES AND HOISTS—Several bulletins have been issued currently by the Whiting Corp., Harvey, Ill. One covers its portable hoists for use in railroad shops, with illustrations of its use. Another features cranes for handling freight at terminals and stations and another covers general equipment for railroad use and for foundries.

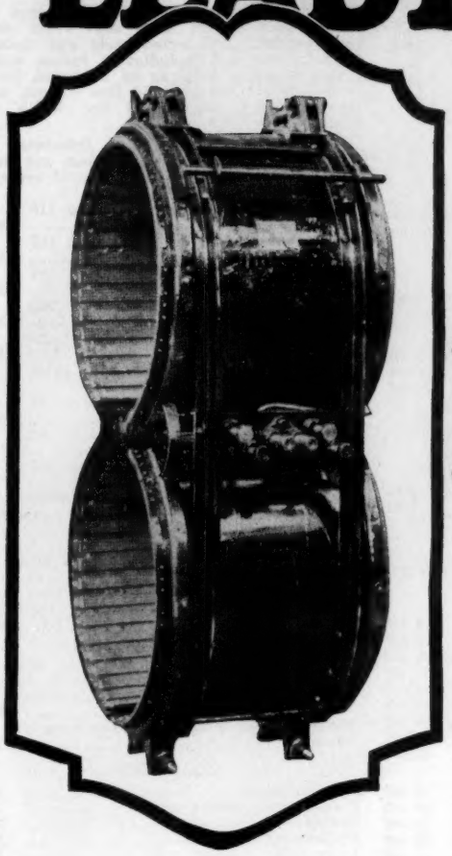
PUMPS—Horizontal single suction centrifugal pumps and reciprocating deep well pump heads are described in two bulletins by Dean Hill Pump Co., Anderson, Ind. Each contains full details of construction and application, with illustrations of the pumps and parts, and such technical data as will assist the user in choosing and applying the pumps to his needs.

WATER SOFTENER—A bulletin by the Graver Corp., East Chicago, Ind., decribes its water softener, with many illustrations of installations and of the apparatus. This company's equipment uses the downflow method of softening, through a natural mineral product supported by a strainer plate perforated with equally spaced slots for thorough distribution.

WELDING RODS—A second of its series of booklets on welding rods and their proper use has been issued by the Chicago Steel & Wire Co., Chicago, through its research department. It deals with the effect of surface materials on steel rods and the resulting welds. The booklet discusses proper use of rods to obviate possible ill effects of these surface materials, which are a necessary result of the methods of drawing the welding wire.

STEAM ECONOMY—Republic Flow Meters Co., Chicago, has issued a publication embodying the experience of its engineering force covering methods for reducing steam costs. It is profusely illustrated by halftones of actual installations of its meters for keeping close check on boiler conditions, to give notice of needed corrections. Application of its methods to various industrial lines is suggested. A section is devoted to installation, use and care of these meters.

LEADING SHEET & TIN MILLS *are using* ELECTRIC ROLL-HEATERS



Eighteen (18) Mills have purchased electric roll heaters.

The list includes mills rolling full finished and black sheets, tin plate, monel and nickel.

Thirteen (13) Mills have placed repeat orders.

Three (3) Mills have placed initial orders for complete equipment.

Nine (9) Mills are 100% equipped.

68% of Total Sales are Repeat Orders

The Trend Tells The Truth

FREYN ENGINEERING COMPANY

310 S. MICHIGAN AVE.
CHICAGO

EQUIPMENT THAT SERVES — FREYN-DESIGN — CONSTRUCTION THAT ENDURES

Discounts and Extras

Steel Pipe

Pittsburgh and Lorain basing discounts, jobber's carloads.

Evanston, Ill., and Indiana Harbor, Ind., take differential 2 points less discount or $4 per ton higher net.

Chicago takes differential 2½ points less than Pittsburgh-Lorain basis or $5 per ton higher net.

	Black	Galvanized
Butt Weld		
⅛-inch	45	19½
¼ and ⅜-inch	51	25½
½-inch	56	42½
¾-inch	60	48½
1 to 3-inch	62	50½
Lap Weld		
2-inch	55	43½
2½ to 6-inch	59	47½
7 to 8-inch	56	43½
9 and 10-inch	54	41½
11 and 12-inch	53	40½
REAMED AND DRIFTED		
Butt Weld		
1 to 3-inch	60	48½
Lap Weld		
2-inch	53	41½
2½ to 6-inch	57	45½
EXTRA STRONG—PLAIN ENDS		
Butt Weld		
⅛-inch	41	24½
¼ and ⅜-inch	47	30½
½-inch	53	42½
¾-inch	58	47½
1 to 1½-inch	60	49½
2 to 3-inch	61	50½
Lap Weld		
2-inch	53	42½
2½ to 4-inch	57	46½
4½ to 6-inch	56	45½
7 to 8-inch	52	39½
9 and 10-inch	45	32½
11 and 12-inch	44	31½
DOUBLE EXTRA STRONG		
Butt Weld		
½-inch	42	32½
¾ to 1½-inch	45	35½
2 to 2½-inch	47	37½
Lap Weld		
2-inch	41	32½
2½ to 4-inch	43	34½
4½ to 6-inch	42	33½
7 to 8-inch	38	25½

(Note—Large jobbers obtain additional preferential discounts of 1 and 5 on black and 1½ and 5 on galvanized.)

Wrought Iron Pipe

Pittsburgh basing discounts, jobbers' carloads. Individual quotations made on delivered basis.

THREADS AND COUPLINGS		
Butt Weld		
¼ and ⅜-inch	+11	+39
½-inch	22	2
¾-inch	28	11
1 to 1½-inch	30	13
Lap Weld		
1¼ and 1½-inch	Upon application	
2-inch	23	7
2½ to 6-inch	26	11
8 to 6-inch	23	13
7 to 12-inch	26	11
PLUGGED AND REAMED		
Two points less than above		
EXTRA STRONG, PLAIN ENDS		
¼ and ⅜-inch	+19	+54
½-inch	21	7
¾-inch	28	12
1 to 1½-inch	30	14
Lap Weld		
2-inch	23	9
2½ to 4-inch	29	15
4½ to 6-inch	28	14
7 to 8-inch	21	7
9 to 12-inch	16	2
DOUBLE EXTRA STRONG		
Butt Weld		
½-inch	+47½	+59½
¾-inch	+28	+40
1-inch	+34	+46
1¼-inch	+28	+40
1½-inch	+27	+39
Lap Weld		
2 and 2½ inches	+13	+25
3 to 4-inch	+ 8	+17
4½ to 6-inch	+ 9	+18
8-inch	+12	

(Note—Large jobbers obtain additional preferential discounts of 1, 5 and 2½ on black and galvanized.)

Boiler Tubes

Pittsburgh less carload discounts. Carload 4 points larger

STEEL (Lap Welded)	
2 and 2¼-inch	23 off
2½ and 2¾-inch	33 off
3-inch	36 off
4¼ to 3¾-inch	38½ off
4 to 13-inch	42 off

(Note—Additional discounts of 5 to 7 extra 5 per cents now being given.)

CHARCOAL IRON	
1½-inch	+22
1¾-inch	+12
2 and 2¼-inch	+ 2
2½ to 3-inch	3
3¾ to 4½-inch	5

(Note—Additional discounts of 2 or 3 extra 5 per cents now being given.)

SEAMLESS COLD DRAWN	
1-inch	56 off
1¼ and 1½-inch	48 off
1¾-inch	32 off
2 and 2¼-inch	27 off
2½ and 2¾-inch	35 off
3-inch	41 off
3¼ and 3½-inch	43 off
4-inch	46 off
4½, 5 and 6-inch	41 off
SEAMLESS HOT ROLLED	
2 and 2¼-inch	30 off
2½ and 2¾-inch	38 off
3-inch	44 off
3¼ and 3½-inch	46 off
4-inch	49 off
4½, 5 and 6-inch	44 off

(Note—Additional discounts of 2 or 3 extra 5 per cents now being given.)

SEAMLESS STEEL MERCHANT BOILER TUBES

Extras:

Add $8 per ton for more than four gages heavier than standard and add 10 per cent to theoretical weight.

Add 5 per cent for lengths over 24 feet and not over 26 feet.

Smaller tubes than 1-inch and lighter than standard gage to be sold at mechanical tubing list and discount.

Intermediate sizes and gages not listed above take price of next larger outside diameter and heavier gage.

SEAMLESS STEEL MECHANICAL TUBING

Base Discounts on New List July 1, 1925

Carbon 0.10 to 0.20 per cent.....50 to 55 off

Carbon 0.30 to 0.40 per cent.....45 to 50 off

SEAMLESS STEEL LOCOMOTIVE AND SUPERHEATER TUBES

Outside diameter	Gage	Net prices per foot f.o.b. Pittsburgh Price
2-inch	12-gage	14¼c
2-inch	11-gage	15c
2-inch	10-gage	16c
2¼-inch	12-gage	16c
2¼-inch	11-gage	17c
2¼-inch	10-gage	18c
3-inch	7-gage	33c
5⅜-inch	9-gage	50c
5½-inch	9-gage	52c

Plus usual extras for forming and for long lengths over 18 feet and for commercially exact lengths.

Plate Extras

BASE

Rectangular plates, tank steel or conforming to manufacturers' Standard Specifications for structural steel, dated Nov. 24, 1922, or equivalent, ¼-inch thick and over on thinnest edge, (except for ¼-inch or 72 inches wide when ordered to weight in pounds per square foot—see width and gage extras), 100 inches wide and under, down to but not including 6 inches wide, 5 feet 0 inches long up to published limit in length but not over 80 feet 0 inch, are base. Extras per pound for width or diameter.

All Plates, Rectangular or Otherwise

¼-inch thick and heavier, but not less than 11 pounds per square foot, if ordered to weigh—

Over 100 inches to and including 110 inches	.05c
Over 110 inches to and including 115 inches	.10c
Over 115 inches to and including 120 inches	.15c
Over 120 inches to and including 125 inches	.25c
Over 125 inches to and including 128 inches	.50c

Plates less than ¼-inch or lighter than 11 pounds per square foot.

Over 72 inches to and including 84 inches	.10c
Over 84 inches to and including 96 inches	.20c
Over 96 inches to and including 100 inches	.30c

Over 100 inches add .35c to width extras for plates ¼-inch thick and heavier.

GAGE

Plates not Exceeding 72 inches Wide

Plates less than ¼-inch gage, to and including ⅜-inch; or lighter than 10.2 pounds per square foot to and including 7.65 pounds per square foot..... .20c

Plates over 72 Inches Wide

Plates less than ¼-inch gage, to and including ⅜-inch; or lighter than 11 pounds per square foot, to but not including 7.65 pounds per square foot ..... .20c

Plates ordered 7.65 pounds per square foot ..... .30c

QUALITIES

Pressing steel	.10c
Flange steel (boiler grade)	.15c
Ordinary firebox steel	20c
Stillbottom steel	.30c
Locomotive firebox steel	.50c
Marine steel	1.50c
Hull material subject to U. S. Navy Dept. Specifications for Medium or Soft Steel	.10c
High tensile hull steel subject to U. S. Navy Dept. or equivalent specifications	1.00c
Boiler steel subject to U. S. Navy Dept. Specifications, classes A and B	1.50c

Hull plates to hull specifications, required to stand cold flanging, take extra for flange steel.

Floor Plates

Checkered plates 1.75c

Checkered plates are not furnished to sketch and are rolled from "Stock Steel" only. No physical tests will be made on checkered plates.

INSPECTION

Mill inspection .....No extra

Charges for other inspection, such as Lloyd's or American bureau of shipping, will be made by inspection bureau direct to buyer.

CUTTING

LENGTH OR DIAMETER

All Plates, Rectangular or Otherwise

Five feet and over up to published limit of length, but not over 80 feet....No extras

Under 5 feet to 3 feet inclusive	.10c
Under 3 feet to 2 feet inclusive	.25c
Under 2 feet to 1 foot inclusive	.50c
Under 1 foot	1.55c
Over 80 feet to 100 feet inclusive	.10c

Over 100 feet add .25c plus .05c for every additional 2 feet or fraction thereof.

Regular Sketches

With not more than four straight cuts. (Including straight taper plates)

Additional extra ..... .10c

Irregular Sketches

With not more than four straight cuts. (Sketches cannot be sheared wiht re-entrant angles)

Additional extra ..... .20c

SIVYER (S) CASTINGS
DEPENDABLE

An unretouched photograph of a pair of Sivyer Chrome Nickel Steel Dies that have worn out after pressing over 10,000 handhole plates

Even Sivyer Chrome Nickel Steel Must Wear Out Some Time

The male and female handhole plate dies, shown above, have finally worn out after having made over ten thousand impressions for the Walsh & Widener Co., Chattanooga. The tool steel dies, formerly used, would not stand up for more than twelve to fifteen hundred impressions. In addition, this user, reports that the Sivyer Chrome Nickel Steel Dies have cut his die costs to about one-fifth of what they were with tool steel. But, even Sivyer Chrome Nickel Steel must wear out some time—as these dies have, after having furnished seven times the service of tool steel at one-fifth the cost.

Sivyer Alloy Electric Steel Castings Can Be Forged, Welded and Tempered.

Heat Treating after machining by the user makes Sivyer Chrome Nickel Steel considerably stronger and more durable than this table of representative physical properties of the annealed steel, indicates.

Tensile strength	100,000 lbs.
Yield Point	65,000 lbs.
Elongation in 2 inches	19%
Reduction of area	30%

If you want greater service from your parts perhaps this, or another Sivyer Alloy Steel may solve your problems. An inquiry will not obligate you.

SIVYER STEEL

SIVYER STEEL CASTING COMPANY, MILWAUKEE

"Where-To-Buy"

A classified-by-products list of advertisers for the convenience of readers. If you don't find what you want, write us and we will tell you where to get it. ¶Index to advertisements will give you page number of any advertiser and by referring to advertisement you can get full particulars about products.

ACCUMULATORS
Birdsboro Steel Foundry & Machine Co., Birdsboro, Pa.
Logemann Brothers Co., 3126 Burleigh St., Milwaukee, Wis.
Pennsylvania Engineering Works, New Castle, Pa.
United Engineering & Foundry Co., Farmers Bank Bldg., Pittsburgh, Pa.
Wood, R. D., & Co., 400 Chestnut St., Philadelphia, Pa.

ACETYLENE (Dissolved)
International Oxygen Co., Newark, N. J.
Prest-O-Lite Co., The, 30 E. 42nd St., New York City.

ACETYLENE GENERATORS
Oxweld Acetylene Co., 30 E. 42nd St., New York City.

ACETYLENE IN CYLINDERS
International Oxygen Co., Newark, N. J.
Prest-O-Lite Co., The, 30 E. 42nd St., New York City.

ACIDS (Pickling)
American Chemical Paint Co., Ambler, Pa.

ADAMITE ROLLS
American Adamite Co., The, 12th & Etna Sts., Pittsburgh, Pa.

AIR COMPRESSORS—See COMPRESSORS (Air)

ALLOYS
Browne, deCourcy, Inc., 8 West 40th St., New York City.
Electro Metallurgical Sales Corp., 30 E. 42nd St., New York City.
Lavino, E. J., & Co., Bullitt Bldg., Philadelphia, Pa.
Metal & Thermit Corp., 120 Broadway, New York City.
Titanium Alloy Mfg. Co., Niagara Falls, N. Y.
Vanadium Corp. of America, 120 Broadway, New York City.

ALUMINUM
Leavitt, C. W., & Co., 30 Church St., New York City.
Rogers, Brown & Crocker Bros., Inc., 21 E. 40th St., New York City.

ALUMINUM (Vanadium)
Vanadium Corp. of America, 120 Broadway, New York City.

ALUMINUM TUBING
Summerill Tubing Co., Bridgeport, Pa.

ANGLES, TEES, CHANNELS—See STEEL (Structural)

ANNEALING BOXES
Adamson Machine Co., The, Akron, Ohio.
Farrell-Cheek Steel Foundry Co., Sandusky, O.
Pittsburgh Malleable Iron Co., 34th & Smallman Sts., Pittsburgh, Pa.
Riter-Conley Co., Oliver Bldg., Pittsburgh, Pa.
Smith, George H., Steel Casting Co., Milwaukee, Wis.
Union Steel Casting Co., 62nd and Butler Sts., Pittsburgh, Pa.
United Engineering & Foundry Co., Farmers Bank Bldg., Pittsburgh, Pa.
Zanesville Malleable Co., Zanesville, Ohio.

ANTI GLARE PREPARATION
Skybryte Co., The, Keith Bldg., Cleveland, O.

APPRAISALS
McKee, Arthur G., & Co., 2422 Euclid Ave., Cleveland, O.

AXLES
Bethlehem Steel Co., Bethlehem, Pa.
Carnegie Steel Co., 431 Carnegie Bldg., Pittsburgh, Pa.
Champion Machine & Forging Co., The 3675 E. 78th St., Cleveland, Ohio.
Illinois Steel Co., 208 So. LaSalle St., Chicago, Ill.
National Tube Co., Frick Bldg., Pittsburgh, Pa.

BALING PRESSES
Logemann Brothers Co., 3126 Burleigh St., Milwaukee, Wis.

BANDS AND HOOPS (Galvanized Strips)
Sharon Steel Hoop Co., Sharon, Pa.

BANDS (Iron)
Bethlehem Steel Co., Bethlehem, Pa.

BANDS (Steel)
Bethlehem Steel Co., Bethlehem, Pa.

BANDS (Welded Iron and Steel)
Akron-Selle Co., Akron, O.

BAR BENDERS
Kardong Bros., 346 Buchanan St., Minneapolis, Minn.

BARGES (Steel)
American Bridge Co., 71 Broadway, New York City.

BARRELS (Steel)
Cleveland Wire Spring Co., The, 1281 E. 38th St., Cleveland, O.

BARS (Acid Resistant)
Alcumite Corp., The, Dayton, O.

BARS (Alloy)
Central Steel Co., Massillon, O.
Donner Steel Co., Inc., P. O. Box 1000, Buffalo, N. Y.
Wheelock, Lovejoy & Co., Inc., 128 Sidney St., Cambridge, Mass.

BARS (Concrete Reinforcements)
Bethlehem Steel Co., Bethlehem, Pa.
Donner Steel Co., Inc., P. O. Box 1000, Buffalo, N. Y.
Franklin Steel Works, Franklin, Pa.
Gulf States Steel Co., Brown-Marx Bldg., Birmingham, Ala.
Laclede Steel Co., Arcade Bldg., St. Louis, Mo.
Ryerson, Jos. T., & Son, Inc., 16th and Rockwell Sts., Chicago, Ill.
Truscon Steel Co., Youngstown, O.

BARS (Iron and Steel)
Bethlehem Steel Co., Bethlehem, Pa.
Lockhart Iron & Steel Co., Pittsburgh, Pa.
Morris, Wheeler & Co., 30th and Locust Sts., Philadelphia, Pa.
Penn Iron & Steel Co., Creighton, Pa.
Republic Iron & Steel Co., Youngstown, O.
Truscon Steel Co., Youngstown, O.

BARS (Steel)
Bethlehem Steel Co., Bethlehem, Pa.
Bliss & Laughlin, Inc., Harvey, Ill.
Carnegie Steel Co., 431 Carnegie Bldg., Pittsburgh, Pa.
Central Steel Co., Massillon, O.
Donner Steel Co., Inc., P. O. Box 1000, Buffalo, N. Y.
Franklin Steel Works, Franklin, Pa.
Illinois Steel Co., 208 S. LaSalle St., Chicago, Ill.
Illinois Steel Warehouse Co., 1319 Wabansia Ave., Chicago, Ill.
Inland Steel Co., First National Bank Bldg., Chicago, Ill.
Jones & Laughlin Steel Corp., Pittsburgh, Pa.
Pacific Coast Steel Co., Rialto Bldg., San Francisco, Calif.
Ryerson, Jos. T., & Son, Inc., 16th and Rockwell Sts., Chicago, Ill.
Tennessee Coal, Iron & Railroad Co., 1351 Brown-Marx Bldg., Birmingham, Ala.
Youngstown Sheet & Tube Co., Youngstown, O.

BARS, STEEL (Electric Furnace)
Timken Roller Bearing Co., The, Canton, Ohio.

BASKETS (Wire)
Meyers, Fred J., Mfg. Co., The, Hamilton, O.

BEAMS, CHANNELS, ANGLES, ETC.
Bethlehem Steel Co., Bethlehem, Pa.
Blystone Mfg. Co., Ironton St., Cambridge Springs, Pa.
Carnegie Steel Co., 431 Carnegie Bldg., Pittsburgh, Pa.
Illinois Steel Co., 208 So. LaSalle St., Chicago, Ill.
Inland Steel Co., First National Bank Bldg., Chicago, Ill.
Jones & Laughlin Steel Corp., Pittsburgh, Pa.
Phoenix Iron Co., The, 20 So. 15th St., Philadelphia, Pa.
Ryerson, Jos. T., & Son, Inc., 16th and Rockwell Sts., Chicago, Ill.
Snead Architectural Iron Works, Louisville, Ky.

BEARINGS (Ball)
Hoover Steel Ball Co., Ann Arbor, Mich.
New Departure Mfg. Co., The, Bristol, Conn.
Norma-Hoffmann Bearings Corp., Stamford, Conn.

BEARINGS (Journal)
Hyatt Roller Bearing Co., Newark, N. J.
Keystone Bronze Co., 39th St., Pittsburgh, Pa.

BEARINGS (Motor)
Hoover Steel Ball Co., Ann Arbor, Mich.
Hyatt Roller Bearing Co., Newark, N. J.
Norma-Hoffmann Bearings Corp., Stamford, Conn.

BEARINGS (Roller)
Hoover Steel Ball Co., Ann Arbor, Mich.
Hyatt Roller Bearing Co., Newark, N. J.
Norma-Hoffmann Bearings Corp., Stamford, Conn.
Timken Roller Bearing Co., The, Canton, O.

BEARINGS (Thrust)
Hoover Steel Ball Co., Ann Arbor, Mich.
Norma-Hoffmann Bearings Corp., Stamford, Conn.
Timken Roller Bearing Co., The, Canton, O.

BELT CEMENT AND DRESSING (Leather)
Williams, I. B., & Sons, Dover, N. H.

BELT LACING (Leather)
Chicago Rawhide Mfg. Co., 1305 Elston Ave., Chicago, Ill.
Williams, I. B., & Sons, Dover, N. H.

BELTING (Chain)
Link-Belt Co., 910 S. Michigan Ave., Chicago, Ill.

BELTING (Leather)
Chicago Rawhide Mfg. Co., 1305 Elston Ave., Chicago, Ill.
Williams, I. B., & Sons, Dover, N. H.

BENCHES AND FRAMES (Drawing)
Morgan Construction Co., Worcester, Mass.
Vaughn Machinery Co., The, Cuyahoga Falls, O.

BENDING AND STRAIGHTENING MACHINES
Cleveland Punch & Shear Works Co., 3917 St. Clair Ave., Cleveland, O.
Hinman, D. A., & Co., Sandwich, Ill.
Kane & Roach, Niagara and Shonnard Sts., Syracuse, N. Y.
Kardong Bros., 346 Buchanan St., Minneapolis, Minn.
Logemann Brothers Co., 3126 Burleigh St., Milwaukee, Wis.
Long & Allstatter Co., Hamilton, O.
Sutton-Abramsen Engineering Co., Park Bldg., Pittsburgh, Pa.

BENZOL AND TOLUOL RECOVERY PLANTS
Koppers Co., The, Union Trust Bldg., Pittsburgh, Pa.

BILLETS (Forging)
Bethlehem Steel Co., Bethlehem, Pa.
Midvale Co., The, Nicetown, Philadelphia, Pa.

BILLETS (Forging, Alloy Steel)
Bethlehem Steel Co., Bethlehem, Pa.

BILLETS AND BLOOMS
American Rolling Mill Co., Middletown, O.
American Tube & Stamping Co., The, Bridgeport, Conn.
Andrews Steel Co., Newport, Ky.
Bethlehem Steel Co., Bethlehem, Pa.
Central Steel Co., The, Massillon, Ohio.
Donner Steel Co., Inc., P. O. Box 1000, Buffalo, N. Y.
Illinois Steel Co., 208 South La Salle St., Chicago, Ill.
Inland Steel Co., First National Bank Bldg., Chicago, Ill.
Interstate Iron & Steel Co., 104 S. Michigan Ave., Chicago, Ill.
Wheeling Steel Corp., Wheeling, W. Va.
Wood, Alan, Iron & Steel Co., Widener Bldg., Philadelphia, Pa.

BLANKS (RAWHIDE, GEAR)
Chicago Rawhide Mfg. Co., The, 1305 Elston Ave., Chicago, Ill.

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